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' 919 << ' . 1661 =(' 6A;?<' D @1<=' 9' E<66 @1=F1G61 <@' ; G=(' :H < ' C<
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@W' CA@';< < <;<@' ;A F<& A @& A=' C< G;1F< 9' C1=' A@C<=1 ' ' C< #<?< F ' 9' A;1< @< <@1F1& CA@' @< . A @<@' 1 . . < =< G<FB 1A; ' F . G< 0 =A 1 ' 66' C< F B; 1<;=& 9 X I1 ?' C1=' <PA . G6<& CA@' F6A1 . <@' ? 6@' ;' 11 B;=& A @' <@1F1' D<61<I<@' 61A & ' =<FB;< C< G<AF<9B6' G ==<==1 ' 9')C< ;<?< F & 1 ' EA=' 6 ' <F<==A; ' ' < ;1FC' C<;' 9;1< @=' A @' C<;' < < . 1<=' + ==<==<@' D ' C1=' B 9 ; B A < 1@<A& =C< F I<; <@' 1 ' ?19 =' A @' G< =1 =' C< ;<A=B;< 6<9 ' D ' C< 6A <# ?& A @' EC< ' 1 ' EA=' <PCAB= <@& 9 B @' C<;0 =<69' @<G;1I<@' 9' C< . <A =' 9' @<9< F< A?A1 = ' C =< EC =< FBG1@1 ' ;' P . D1 1 ' =C< CA@' <PF1 <@' E1 C B ' G ==<==1 ?' C< . <A =' 9' =A 1=9 1 ?' C< . & 11<I<;' CA@' C< C1?C<= ' . < . D<;=' 9' C< A;1= F;AF ' @1=G6A <@' %1 F1 ' 9' C< 8" ?13F<@ ' A' @<=1;< 9 ;' E<A6 C' N A @' 1 '9AF ' C< EC 6< 9'+;A F< ;GG<A;<@' ' D< @<61I<;<@' I<;' ' C< . <;F ' 9' A' B . D<;' 9' G6B @<;<;=' EC =< B . D<;=' 1 =B;<@' C< . ' 1 . . B 1 ' C< D6<=' @< . A @<@' 66=' ' ; A@=' EC1FC' E<;< 9;<<& A @' AP<=' 1 QF1 1<=' EC1FC' E<;< <P< . G ' 9; .' C< . ' C< ' F;<A <@' 991F<=& GA < =' 9' D161 & A @' G;1I16<?<=' 9' A66 = ; =' 9 ;' . < & A @' =<F;< 6 '1 F;<A=<@' C< A . B ' 9' <I<; ' =G<F1<=' 9' @B ' A @' <PF1=<

B ' 6<9 ' A' F B F16' EC1FC' F 1I<@' A ' C<=< G; F<<@1 ?=& A @' EA=' 9 ;F<@' ' ;<=1? ' C< =BG<;1 < @< F< 9' C< 91 A F<=' A @' C< ? I<; . <

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D1 <;' <; . =' C<' 166' A@ . 1 1= 1 A 1 ' 9' C<' LB<< ' ';<G; AFC<@' 1 ' E1 C' CAI1 ?' D; >< ' 99' C<' G; K<F <@' B 1 ' D< E<< ' C<' B ?' - 1 ?' A @' C<' B=<' 9' AI &' 9 ;' C<' GB;G =<' 9' F F6B@1 ?' E ' B G GB6A;' A661A F<=' E1 C' C<' B=<' 9' B= ;1A&' 1 ' A66B=1 ' ' C<' G; K<F ' 9' A' @ BD6<' A661A F<&' ' C<' <' GA; ' D< E<< ' C<' 9A A' 9' GA1 ' A @' B1=' : &' A @' ' C<' C<;' GA; ' D< E<< ' C<' +;1 F<=' 61MAD< C' 9' ;A F<' A @' C<' +;1 F<' 9' C<' = B;1A=N' ;<G; AFC<@' 1 ' E1 C' CAI1 ?' 9A16<@' ' D=<; I<' C<' @1F ' 9' 5 A <=N' QE1 C' CAI1 ?' I<;EC<6 . <@' C<' G ;' E1 C' AP<=N' A @' G< 6 ' A AF><@' C<1 = 6< '9 ;<1? <;='1 ' EC =<' CA @=' EA=' C<' ? I<; . < ' 9' C<' >1 ?@ . &

3 C1=' . I< . < &' . A@<' D ' ?;A @<<=' 1 ' C<' A . <' 9' C<' G GB6A;' 1 <;<= =&' A ;AF <@&' C E<I<;&' DB ' 61 6<' NG GB6A;' = . GA C ' C<' . A==' 9' C<' ' G< G6<' A @' C<' +; <= A =&' < 61?C < <@' D ' %BG6<==1= ; A &' G<;F<1I<@' D< <A C' 6B=' . A=>' C<' ;<A6' GA==1 =' A @' A1 . =' 9' A . D1 1 B=' A @' @1=F 0 < <@' . < &' A @' ;< . A1 <@' @<A9' ' C<' AGG<A6' 166<; 1' A@I 1=<@' C<' LB<< ' ' . A><' A ' 1 . . <@1A <' A AF>' ' C<' 9<@<;A <=&' A @' C1=' A@I 1F<' EA=' ? @N DB ' F1 1' G;<9<;;<@' ' @<61D<;A <' ' C<' G1 1 ' 9' K A1 ;B<' +<AF<&' C<' 6A <;' EA=' 9 66 E<@&' A @' C<' ;<A ' 9' A1 < < <C B6@&' =B; A . <@' C<' [A6 ;B<' +<AF<`' a+A6 ; ' +<AF<b&' EA=' F F6B@<@' 1 ' * ' (' C1=' ;<A ' C<' LB<< ' 1 F;<A=<@' C<' @1? 1 1<=' A @' G< =1 =' 9' C<' ;<D<' 6 6 ;@=&' A @' G; . 1=<@' A' G; . G ' A==< . D6 ' 9' C<' A <= 0< <;A6 ' 5 B1=' : ' EA=' E' 1 ' C1=' 9 B; << C' <A;&' A @' EA=' ;<F ? 1=<@' A=' 9' A?<&' DB ' 1 ' EA=' 6 ?' A9 <;' C1=' <;<' C<' EA=' A C1 ?' =AI<' - 1 ?' 1 ' ' A . <N A @' A ' C<' D<@' 9' KB= 1F<' A ' EC1FC' C1=' . AK<= ' EA=' G1 F6A1 . <@&' C<' B ?' B1=' =A1@' ' C1=' . C<; , [' ' F =< ' A @' E1=C' CA ' B' =C B6@' D<' D< <@' 1 ' <I<; C1 ?' 1N @' <I<; EC<;<&' A @' CA &' A9 <;' . <&' B' =C B6@' D<' C<' C<A@' 9' . ' F B F16 `' A;1<' @<' <@1F1' = 166&' C<;<9 ;<&' ;< A1 <@' C<;' G E<;N A @' 9 ;' C<' GB;G =<' 9' <P<FB 1 ?' C<' ;<A ' 9' A1 < < <C B6@&' =C<' F I ><@' C<' A <= 0< <;A6' 9 ;' C<' * C' F D<;' 9' CA ' <A;' 6K<=<' A <=' E<;<' C<' 6A=' EC1FC' A==< . D6<@' D<9 ;<' C =<' 9' 2 !' ' C1=' FFA=1 ' 1 ' F =1= <@' 9' <A;6 ' 91I<' CB @;<@' @<GB 1<=' 9' = A1<= 0< <;111&' C<' C;<<' ;@<;=' C<' LB<< ' A @' C<;' 1 1= <;=' < @<A ' I B;<@' ' GA;A6 =<' C<1;' 1 96B< F<' D ' =< 1 ?' C< . ' A?A1 = ' <AFC' C<;&' A @' 1 ' C1=' C< ' E<;<' =BFF<==9B6' AFC' ;@<;' B;?<@' 1 =' E ' F6A1 . =' C ' F6<;? &' 1 ' EC =<' ;A >=' 91?B;<@' A ' ;A ;' A6;<A@ ' @1= 1 ?B1=C<@&' A @' = ' ' D<F . <' F<6<D;A <@ , ; . A @' @B' +6<==1=&' (1=C G' 9' B , @< . A @<@' CA ' C<' @<F;<<=' 1' C<' B F16' 9' ;< ' =C B6@' D<' ;<F ? 1=<@' 1 ' ;A F<

')++,(1&' +' *+' & +&;1+ + (' : 4' '8* ',

1 ' C<1;' < 1;< ℕ C<' D161 ' A=><@' 9 ;' C<' AD 61 1 ' 9' C<' ' '
' A @' C<' C1;@' = A <' @<=1;<@' C<' =BGG;<==1 ' ;' @1 . 1 B 1 ' 9'
C<' G< =1 =' E611FC' E<1?C<@' = ' C<AI16 ' ' C<' ;<A=B; ' C<' 6A <;'
;@<;'9 B @'1 =<69'F;B<66 'CB . 161A <@'D ' C<' E ' C<;=' 'EA=' 61 6<' CA ℓ
AFF ;@1 ?' ' FB= . ℓ 6 <' =C<;199' 9' C<' . <;FCA =ℓ 1; ℓ EC ' EA=' 1 ='
G;<=1@< ℓ EA=' 6 'A66 E<@' 'A@@;<==' C<' +;<=1@< 'G 'C1=' > <<=ℕ C<' EA='
;<G; AFC<@' 9 ;' CAI1 ?' F . GA;<@' C<' C;<<' ;@<;=' 9' C<' ==< . D6 ' 'A'
?;<A '9A . 16 ℓ 9' EC1FC' C<' D161 ' A @' F6<;? 'E<;<' C<' <6@<;' D;A FC<=ℓ
A @' C<' C1;@' = A <' C<' B ?<;' C<' LB<< ' C<;=<69' ;<A <@' C<'
@<GB 1<=' 9' C1=' ;@<;'E1 C' ;B@< <==' A @' A;; ?A F<ℓ A6 C B?C' C< 'EG;<
C<' . = 'M<A6 B=' @<9< @<;=' 9' C<' ; A6' G;<; ?A 1I<=ℕ ' 6 '@< . A @1 ?'
CA '1 '=C B6@' D<' <= AD61=C<@' A=' A'G;1 F1G6<' CA ' = I<;<1? =' =C B6@' 'D<'
@<G =<@' 'AFF B ' 9'C<;<= ℓ DB '<I< '<PG;<==1 ?' A' E1=C' CA ' C<' ; E '
=C B6@' D<' ;< @<;<@ℓ D 'A'9 ; . A6' 6AEℓ 1 @<G< @< ' 9' C<' =G1;1 BA6' G E<;'
C<' F6<;? ℓ D ' C<' . B C' G9' A;@1 A6' %BG<;; ℓ 9 ; . <;6 ' 1 1= <;' '
< ; ' ℓ< <;?< 1FA66 ' F . DA <@' C =<' G; G =1 1 =ℓ A @' C<' ==< . D6 '
<IA@<@'F . 1 ?' 'A '@<F1=1 ' ' C<' =BDK<F '

C<' ==< . D6 ' EA=' @1== 6I<@'1 ' C<' F B;=<' 9' C<'9 66 E1 ?' <A;'E1 C B '
CAI1 ?' AFC1<I<@' A '1 . G ; A ';<=B6 ℕ A @' C<' @<GB 1<=' E<;<' @1= . 1==<@'
E1 C' A' IA?B<' G; . 1=<' CA ' C<' 0 I<; . < ' E B6@' <PA . 1 <' 61<1;ℓ
. < . ;1A6=' A @' A><' 1 'F =1@<;A 1 ' C<1;'@< . A @=' C<' . < . ;1A6=' 9'
< . ;1A6=' 9' C1;@'ℓ = A <' F A1 <@' C<' <6< . < =' 9' A' G ; 1 ' 9' C<
C<' 11B;@ = A <' AFF . G61=C<@ℓ A ' C<' F6 =<' 9' C<'9 66 E1 ?' F< B; ℓ
D ' A' . ;<' F<6<D;A <@' ==< . D6 ' C<=<' E<;<ℓ '_A ' B 19 ; . ' = = < . ' 9'
FB= . =' A @' E<1?C =' A @' . <A=B;<=ℓ C<' AD 61 1 ' 9' . A= <;=C1G=' A @'
EA;@<;=C1G=ℓ C<' =BGG;<==1 ' 9' 9A; . <;= ?< <;A6' 9' C<' 91 A F<=' A @' 9'
<PF<G 1 A6' ;1DB A6=ℓ A @' C<' @1 . 1 B 1 ' 9' C<' <PF1=<' @B 1<=ℓ A @' 9'A1@='
(B ℓ 9'A66' C<=<' E1=<' A @' 6<?1 1 . A <' @< . A @=ℓ ' <' EA=' ?;A <@

C<' A <= 0< <;A6' E<;<' B AD6<' 'GAF19 ' C<' >1 ?@ . ℓ 1 'EC1FC' <I<; '
>1 @' 9' ADB=<' ;< . A1 <@'1 . FC<F><@ℕ A @' 61<' 91;=' <DB661 1 ' 9' @1=F < '
A; =<' 1 ' C<' D = .' 9' C<' +A;61A . < '1 =<69ℓ =<F;< 6 '< F . ;A?<@' D ' C<'
G;1 F<=' EC ' CA@' =1? <@' C<' 'G<AF<' C1=' ?;<A 'KB@1F1A6' D @ ℓ 9

I' ??B7'$+ ' <B' <M$A' L7G#@ @' 7' ?DA<B ; ' <M@' 3$+>+?$>#' >+C' RDC$?$>#' B33$?@A' SB7@'
M@7@C$< ; K' B+' ?B+C$<$B+' B3' <M@' L>K ; @+<' B3' >+' >++D>#' <>N ' > ; BD+<$+ '<B' <M@' A$N<$@<M'
L>7<' B3' <M@' L7$?@' >' SM$?M' <M@K' M>C' J@@+' LD7?M>A@C ' M@' +BJ$#$<K' S@7@'R@>#BDA' 3 <M@'
M@7@C$<>7K' +><D7@' B3' <M@A@' B33$?@A' J@?>DA@' <M@K' @7@ $+' <M@' M>+CA' B3' ; @ ; J@7A' B3' <M@'
M$7C' A<><@ ' M@' 7@?@$G@C' $<A' +> ; @' 37B ;' M>7#@A' >D#@<' JK' SMB ;' $<' S>A'
$+<7BCD?@C

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5EC1FC' . A ' 9' C<' . < . D<;=' _E<;<' @<GB 1<=' 9' C<' C1;@' = A <(' <A?<;6 6A1@' c1 6@' 9' A ' GG ; B 1 ' 9' AI< ?1 ?' C<' CB . 161A 1 =' ' EC1FC' CA ;@<;' CA@' D<< ' <PG =<@(' A @' 9' 1 F;<A=1 ?' 1 =' E ' 1 . G ; A F<(' A @ 1 . @ <@(' D ' A' 9 ; . A6' @<F;<<(' G;1 F<=(' @B><=(' G<<;=(' A @' A66' 1 ' 9AF ' EC CA@' A' ;1?C ' ' @ ' = (' ' A==1=' C< . ' 1 ' @<61D<;A 1 ?' ' C<' = A <' 9' GBD61F; A99A1;=' =' . A ' 9' C<' LB<< 3=3G<;= A6' < < . 1<=' _E<;<' F A1 <@' 1 ' C1= F6A==(' =C<' =AE' 1 ' C1=' C1 C<; ' B C<A;@ 9' = <G' A' @1;<F ' A AF>' A?A1 = C<;' G<;= ' A @' AB C ¸;1 (' ¸A @' G; C1D1 <@' C<' G¸; G =<@' A= =<;CD6 ' C<' +A;61A . < '1 . . <@1A <6 'A@@;<==<@' ' C<' 611 ?' ; B+A<7>+?@A B3 >7#$> ; @+<', , < <;?< 1F' ;< . = ;A F<=(' EC1FC' E<;<' ;<A@' ' C1 . ' 1 ' C< G;<=< F<' 9'C1=' . C<;' A @' C1=' 1 1= <;=' ';<G;<=< <@' CA (' 1 ' C<6@' C<' G6AF<' 9' C<' 1 . F16' 9' C<' ?;<A ' (A; =' 9' ;A F<(' A @' CA (' D ' QI1; B<' 9' C1=(' 1 ' CA@' A6EA =' A>< ' A' GA; ' 1 ' C<' F @BF ' 9' GBD61F' A99A1;=' ' < ;<A <@' C<' - 1 ?' ' 9 66 E(' 1 ' @ . <= 1F' A=' E<66' A=' 1 ' 9 ;<1? ' A99A1;=(' C< G 61F ' 9'C1=' 9A C<;N ' G; QI1@<' CA ' C<' = I<;<1? ' =C B6@' D<' ?BA;A <<@' A?A1 = ' 6 ;A . A <' @ F ;1 <=N A @' CA ' C<' 0 I<; . < ' =C B6@' ' D<' 1 96B< F<@' D ' 9 ;<1? ' F B =<6=' ' F< =B;<@' C<' LB<< 3=' G 61F (' C<' G; @10 ?A61 1<=' 9' C<' B; (' C<' D= AF6<=' C; E ' 1 ' C<' EA ' 9' C<' @B<' <P<FB 1 ' 9' 'KB= 1F<' D ' D C' C<' B; ' A @' D6<=(' A @' C<' 1 =A 1AD6<' AIA;1F<' 9' C<' A6' 991F<;=' A @' 1 1= <;=' ' @< . A @<@' CA ' A66' ADB=<=' =C B6@' D<' ;<@;<==<@(' CA ' ' <@1F ' =C B6@' D<' FA; ;1<@' 1 ' <P<FB 1 ' QE1 C B ' G;<I1 B=' ;<?1= ;A 1 ' A @' ' I<;191FA 1 ' D ' C<' I<;<1? ' B; =(' A @' CA ' C<' +A;61A . < ' =C B6@' D<' A ' 61D<; ' ' F I ><' C<' G<<;=' A @' G;1 F<=' EC< <I<;' 1 ' =C B6@' C1 >' G; G<;' ' 9B; C<;' @< . A @<@' C<' - 1 ?3=' AB C ;1 ' ' A . <' ' C1 . ' C<' AB C ;=' 9' C<' <P1= 1 ?' @1= ;@<;=(' A @' ' <PG =<' C<1;' =CA . <9B6' . A6I<;=A 1 =' ' C<=<' 9A . B=' ;< . = ;A F<=' <PF1 <@' C<' A ?<;' A @' 1 @1? A 1 ' 9' C<' LB<< (' C<' 1 1= <;=(' A @' C<' F B; 1<;=N A @' ' C<' 9 66 E1 ?' @A ' C<;<' AGG<A;<@' A' @<F;<<' 9' C<' # B F16' D ' EC1FC' C< ' E<;<' =BK#G;<==<@' C<' +A;61A . < ' ;<=1= <@N DB &Q CAI1 ?' ;<F<1I<@' A6'' 6< <;=' 9' F . . A @(' EA=' F . G<66<@' ' ?1I<' EA (' A @' 6<9 ' 1 =' @<F;<<' 9' F I FA1 1 ' B <P<FB <@(' QE1 C B (' C E<I<;(' ;<I >1 ?' 1

C<' @1=F < <@' GA; (' A @' @# <=G<F1A66 (' 99<;<@' A ' < <;?< 1F' GG =1 1 ' ' C<' . A;;1A?<' 9' B1=' 16 ' E1 C' C<' 9A A& C< ' ;<FAG1 1@A <@' C<' <I16=' E1 C' EC1FC' ;A F<' CA@' D<< ' , ,. I<;EC<6 . <@' D ' GA1 (' A @' B;?<@' C<' <F<==1 ' 9' F;B=C1 ?' C<' B=<' 9' B= ;1A' ;A C<;' CA ' A@@1 ?' ' 1 =' = ;< ? C ' C<' LB<< ' ;<A <@' 61<=<

) ! # " : 4 8* -

;<G;<=< A 1 E1 C F < . G A @ @1< . A;;1A?< EA ;<= 6I<@ @W 1 . . <@1A <6 E1 C@;<E 6<; . 1 (<ABI 1=1=(B166 C1=G;1 F10 GA61 9 <@A A < < K== = ?B<I166< +1FA;@ C< 6 ?<; C G<@ 9 ; =BFF<==A I< D 9 ;F< 9 A; . = A @ G;<GA;<@ 9 ; C< F 961F C< +; <= A = <PF1 <@ AF 1 D C< %B>< @< CA ;A ?<@ C< . =<6I<= C<1; =1@< A @ D<?A 6<I ; G= C< G;1 0 F1GA6 1 1= <;= 9 C< - 1 ? E<;< A CA 1 . < C< A?<@ 166<; 1 C< +;<=1@< S<A 1 A @ C< CA F<66 ;@< 166<; C< ;<A <@ C< AD I< . < 1 <@ C = 16< @< . = ;A 1 E1 C 1 @199<;< F< A @ CA= < <@ C< F 0 F6B=1 9 C< . A;;1A?< B1= : E< .<< C< 9A A A=9 ; A= (;@<ABP A @ C1=G; ?;<== EA> A F< 9<= 1I< A @ EA;61>< (1= %ABGC1 A;=CA6 @< AIA6 G; <F <@ 1 D A A1' . EC1FC 9 66 E<@ CA 9 C< 1 =B;?< D6<= A @ A6I1 1= = F . . A @<@ D (B166 B @<; C< ;@<;= 9 @W C< G< G6< > GA; 1 C< EA; A @ C< A; . 1<= <I<; FA . < 1 AF BA6 F 661=1 C< %B>< 9 OB1=< F @BF <@ GA1 C< +;1 F<== 61MAD< C C< - 1 ?3= =1= <; 1 < @<@ 9 ; C< 9A A @ D; B?C DAF> E1 C C1 . C< 9B B;< =G B=< 9 B1= : F<6<D;A <@ B @<; 61< A . < 9 < 9 B= ;1A C1= . A;;1A?< EA= d 9 ; B A < < A @ C< E =G B=<= EC =G<<@16 A= ;1A *7 AFJB1;<@ A @1=61>< 9 ; <AFC C<; 61I<@ A6 . = < 1;<6 AGA; <@1F1 1 . . <@1A <6 A9 <; C< . A;;1A?< `D9 C<;= < <;<@ 1 <? 1A 1 E1 C C< B ? - 1 ?3= < < . 1<= A @ =1? <@ C< ;<A 9 ;<A e B % #@B C< <; . = 9 EC1FC E<;< 1;<6 C<1;A@IA @B C< +;1 F< A @ C1=A@C<;< E<;< @<F6A;<@ 1 F< A @ ? @ =<;IA 9 C< - 1 ? F =1@<;AD6< =B . = 9 . < E<;< D<0 = E<@ C< . N A @ A F<; A1 . <A=B;< 9 =A 1=9AF 1 EA= AFF ;@<@ C< A6I1 1= = A @ 61< +A;61A . < C< A; 1F6< 9 C1= ;<A EC1FC EA= . = ?;1<I B= C< LB<< C<; EA= CA D EC1FC CW - 1 ? < ?A?<@ C1 . =<69 ?1I< 6 FF= ;@1? 1 1<= = ;A ?<;= C< 6@ 1 1= <;= EC . C< B; 1F> A . <@ C< ! E<;< 1 . . <@1A <6K@1= . 1==<@ %B +6<==1=Y (1=C G G9 BZ < <;<@ C< <E F . F EC1FC EA= B @<; C< FC1<9 @1;<F 1 9 @W EC =G<<@16 D<FA . < A66 G E<;9B6 A @ . A@< C1= G E<; 9<6 D <@1F1 A @ C<; 9AI B;1 <= A @ <=G<F1A66 = D A;=CA6 @3 F;<

I D #@AA$A @+<@7@C <#$@ BD+?$# >A @?7@<>7K B3 <><@ 3B7 >7 >+C B7@$ + 33>$7A '2@ #$>C 3B7 AB ; @ <$; @ J@@+ <M@ * D@@+(A # ; B+@7 @ J@?> ; @ > ?>7C$+># $+ , >+C 3<B ; <M>< <$; @ JB7B <M@ 3 $?M@#$@D

<PG<@1 1 ' C< 9A I B;1 < CA@ = 166 9B; C<;' A??;A @1=<@ C1=' G =1 1 A @ CA@ A@@<@ ' C1=' B . <; B=' 991F<=' C =< 9 F = AD6< A @ ><<G<;' 9 C< =<A6= < > <E' CA '19 C< E B6@ ;< A1 'C1=' 1 96B<, F< E1 C C< - 1 ?' C< . B= ' D< <I<; C1 ?N DB ' C< @1@ ' 6 ?' < K ' C1=' <E' F = AD6< In @1? 1 1<=@ 9 ;' A' 9<I<;' FA; ;1<@ C1 . ' 99 1 ' 9 B;' @A =

C< +; <= A ' <=@1?B1#;<=@ F . . A @<; 1 FC1<9 9 C< A6 A; . @ D<FA 1< A' F I<; ' ' A C 61F1= . @ A @ EA=' F;<A <@ = AD6<' 1# F 0 I<;=1 ' IA=' C< =1? A6 9 ;' B . <; B=' @<9<F 1 =' 1 ' C< +; <= A ' GA; ' C< A; JB1=' @< 6A' ;F< A @ C< B ' @< CA 166 & 6199 3=' F;A @= @=B;;< @<;<@ C< <#6 ABDA 'A @ C<, =<I< A+. @3@?<$B+'B3 <A A FC1<9= C<;' 1?B<= ; <=@1 ';< B; ' 9 ;'6A;?< =B . =' A @ . A;=CA6=' DA =' CA @C E<I<;@;< . A1 <@ 1 F ;;BG 1D6< A @ @<=1;<@ G<AF<' 'EA=' =1? <@ A ' G<61<;@ @<=G1 < @@@ C; B?C C< 1 96B< F< 9 <@1F1@ EC ' IA=' K<A6 B=' 9 A' G;1 F< EC =< G E<;' @1 . 1 1=C<@ IC< 'A99A1;=' E<;< ;A JB16@ A @ 1 F;<A=<@ 1 ' C< 1 . < 9 A 1 A6 ; BD6<=' C< @1F ' 9 A <=' IA=' F 91; . <@N C< - 1 ?' A ' C< =A . < 1 . < A66 E1 ?' C< +; <= A =' 'A==< . D6< 9 ;' C< GB;G =<=' 9 C<1;' E ;=C1G@ DB 'G; C1D1 1 ?' C< . ' ' . << '9 ;' G 61 1FA6 DK<F =' %B' +6<==1=@ A9 <;' C< G<AF< 9 G<61<;@ D A1 <@ G<KF< 9 C< FA;@1 A63=' CA & A @ C< F<9 ; C D<FA . < > E 'B @<;' C< +dYd' F<6<D;A <@ A . < 9 A;@1 A6 1FC<61<B@ A @ EA=' = ' A9 <;' . A@< A' . < . D<;' 9 C< F B F16 D ' C< A; JB1=' @ ' 6A' 1<B I 166<' A' 1<B I 166<' 1 C<;1 <@ A' G ; 1 ' 9 C< 9A I B;' < K <@ D ' C< %B><' @< B <=N G<; Q 9 ; . <@ C< 9B F 1 =' 9 +;1 . < 1 1= <;' E1 C B 'G ==<==1 ?' C< A . <@ A @ . A1 A1 <@ C1=' F;<@1 ' D ' 96A <;1 ?' C< - 1 ?3=' A= <=' A @ FC<;1=C1 ?' C1=' @1=61><' 9 ;' C1=' . C<;' A @ K<A6 B= ' 9 OA= 'C1=' D; C<; ' <' EA=' ?B16 ' 9 A' ?;<A ' F;1 . < IA;@=' C< 6A <;@ I1 C C< F . G61F1 ' 9 C< - 1 ?@ D ' @<G;1I1 ?' C1 . ' 9 A ' <PF<66< ' ? I<; ;' C< CA@@ A @ EC .' C<';<G6AF<@ D ' C< B ' @< B@<@ A' . A ' 9 G6<A=B;<@ <P ;A ;@1 A;16 ' 91 <@ ' F ;;BG ' C< . 1 @ A @ C<A;' 9 C1=' GBG16' (B ' C1=' 1 9A . B=' AF 1 ' B; <@ B ' ' C< G; 91 ' <1 C<;' 9 C< - 1 ?' ;' C1=' . 1 1= <;' A' 1<B I1 <' = ';<0 G< <@ 9 CA I1 ?' G< <@ C< F B F16 FCA . D<;' ' 1FC<61<B@ EC ' D A1 <@ A' ?;<A ' 1 96B< F< I<;' C< B ?' - 1 ?3=' . 1 @ D 'G 1 1 ?' B ' 'C1 . ' C< I1F<=' 9 C1=' 0 I<; . < @ C< 1 . . < =<' ;<= B;F<=' 9 ;A F<@ A @ C< =<F;< ' 9 1 =' = ;< ? C ' A' 1<B I 166<' IA=' @1=?;AF<@ A @ =CB ' BG 1 ' C< FCA <AB' 9 . D 1=< ' 1FC<61<B' D<FA . < A66 G I<;9B6@ A @ G ==<==<@ C< ?;<A ' A; ' 9 ;< @<;1 ?' C1 . =<69 1 @1=G< =AD6< ' C< - 1 ?@ A6 C B?C 1< 6A <;' D ' ' . <A =' 61><@ C1 . ' B1=' : ' CA <@ A ' . A 19<= A 1 ' 9 A' =G1;1 ' 9

6 i ' (' : +' ' 8+ 2 ' (

61D<; ' A . ?=' D1=' =BDK<F =N' ;<9B=<@' ' A@ . 1 ' CA ' C< ' G ==<==<@' A ' ;1?C =' 1 @<G< @< ' 9' C1=' E 166N A @' EA=' 1 =G1;<@' 1 ' 9AF (' E1 C' A' GA==1 ' 9 ;' A;D1 ;A; 'G E<;(' EC16=' A B;<' CA@' 6 ';< @<;<@' C1 .' FAGAD6<' 9' D< 0 1 ?' <' 9 B @' 1 ' 1FC<61<B' C<' = ;< ? 1I' 9' . 1 @' 1 ' EC1FC' C<' EA=' @<910 F1< (' A @' D<61<I<@' CA (' E1 C' C1=' A1@(' C<' EA=' A ' AD= 6B <' . A;FC(' EC16=' 1 ' ;<A61 'C<' EA=' A' =6AI<' A66' C1=' 619<

+ '

( ) * + (+ 3 & ((& '

* # * 8

* +' 7@>< @G$#A S M$?M BLL7@AA@C <M@ Q$+ CB ; ' S@7@ ' <M@ ; B7>#' S@>Q+@AA 9 C - 1 ?'N C A . D1 1 ' 9 C . < . D<;= 9 C A6 9A . 16 & EC ' E<;< A66 F6A . ; B= 9 ;' A =CA;< 1 ' C 0; I<; ' 11 ?@ .' D<9 ;< . < N C G;1@< A @ AIA;1F< ;' C ?;<A ' D6<=& EC ' E<;< %< 1FC< <B& AFFB= . <@ ' =<66 C<1;' =<; I1F<= A @ D<@1< F<& A @ EC E<;< F<; A1 ' ' 1 F;<A=< C<1;' G E<;' A @ 9 ; B <= 19 C< ' F B6@ ;< @<;' C< . =<6 I <= 1 @1=G< =AD6< ' = . < G E<;9B6 G;1 F< 9 ; . 1@AD6< ' C< . A;FC " @<;' C<=< F1;FB . = A F<= C< 9 ;F<= 9 ;A F< j I<;< 1 F<==A 6 ' @1 I1@<@& C< ? I<; . < ' B F<; A1 & C< ;<A=B; 'G166A?<@& A @ C< >1 ?@ .' A G;< ' ' A A;FC ' C< GA 1A;@=& A==1= <@ D ' LB<< ' <& A6EA = A 9 ;<1? <;' A ' C<A; & > A@ IA A?< 9 C<=< FA6A . 1 1<= ' D A1 ' C< FC1<9 1 96B< F< 1 ' C<&F B F16& A @ C<1;' G E<;9B6 G 61 1FA6 1 96B< F< C<6@ C< +; <= A 'GA; '1 ' A' F = A ' = A < 9 A6A; . & A6 C B?C B AD6< ' F;B=C 1 ' C< ;<=B6 ' EA= CA ' C< 6A <;' D<FA . < AFFB= . <@ ' ;<?A;@ 1 =<69 A= A' G< G6< @1= 1 F '9; .' C< DB6> 9 C< A 1 & A @ CA ' ;A F< F A1 <@ < <6< . < ' 9 @A ?<;' C< . ;<' A ' = ; ?' G6AF<= E<;< 1 ' C< CA @= 9 C< A6 I1 1= =& A @ C< =BFF<== 9 C< 1 <@ +; I1 F<= CA@ 1 =G1;<@ C< . ' E1 C C< FC1 . <11FA6 @<=1;< 9 9 ; . 1 ?' C< . =<6 I <= 1 ' A' <GBD61F& 9 EC1FC FC< < =C B6@ D< C< DB6EA;> A @ FAG1 A6

66 D<FA . < FCA ?<@ 1 ' ;A F< A= = ' A= 1FC<61<B =<1M<@ E1 C A' 91; .' CA @ C< @1;<F 1 ' 9 A99A1;=' C< ;<= 6B 1 = 9 C< F B F16& EC1FC 61< GA 1A;@= CA@ C1 C<; ' A6EA = > E & E<;< E' ><G ' =<F;< ' C< A . 0 DA==A@ ;= E<;< 1 = ;BF <@ ' =G<A> A @ AF ' E1 C D 6@ <== ' C< A . DA=0 =A@ ;= 9; .' . < CA I1 ?' G 1 <@ B ' ' C< A;@1 A6 C< IA;1 B= = <G= EC1FCC< =C B6@ A>< 1 'C1= <? 1A 1 = E1 C CA ' B; & 1FC<61<B ;<G61<@& [' C< - 1 ?' 1= ' E1661 ?' ' D< ;196<@ E1 CN B' E166 <6K6 C< + G< CA ' A ' A; . ' E166 D< =< ' 1 ' C< A6 <61 < ~ 611= EA= C< 91;= ' = <G 1 ' C< &<E GA C 9 ;< FC @1G6 . AF

2 '2 B7' : 4' '8* '

@B;1 ?' C1=' < . DA=?;' A ' B C<A;@ 9' . A? 191F< F<' A @' A ' AB@AF1 B=' 5?A66A ; &' 9'EC1FC' <I< ' C<' LB<< ' C<;=<69'D<FA . <' C<' DK<F ' 1FC<61<B&' C1 . =<69' =B=G<F <@' 9' CAI1 ?' A',< @<; <=='' 9 ;' C1='' G;1 F<==&' AI< ?<@' C<Y 1F1 ?&' ;' C1 . =<69&' D ' A@ G 1 ?' . <A=B;<='' EC1FC' E<;<' CB . 161A 1 ?' EA;@='' (BF>1 ?CA . 'N EC &' 1 ' C1='' B; &' < <; A1 <@' A' @<<G' ;<=< . < ' A?A1 = ' C<' A;@1 A6&' A @' < <;<@' 1 ' C<' FADA6' EC1FC' CA@' D]< ' 9 <@' A?A1 = ' C1 . ' C<' DK<F ' 3' C1='' 6<A?B<' EA='' ' I<; C; E' C<' . 1 1= <;N' A @' C =<' 9' EC . '1 ' EA='' F . G =<@' E<;<' <I< ' AFFB=<@' 9' A' @<=1;<' ' @<G =<' C<' - 1 ?&' F; E ' 0A= ' 1 ' C1='' = <A@&' A @' . A;; ' C<' 6A <;" ' <' 9' B= ;1A

9 ; . <@' & 9' C1='' IA= ' F D=G1;AF &' 1FC<61<B' . A@<' C<' - 1 ?' AF0 JBA1 <@' E1 C' 1 =' <P1= < F<&' A @' FB 1 ?6 ' 91;1?C < <@' C1 . ' D ' A' G; =G<F ' 9' @A ?<;='' EC1FC' 6 ' C;<A < <@' C1='' E ' . 1 1= ; &' <' B3 $?M@#$@+ &(G 1 <@' B' ' C1 . ' CA ' C1='' @1? 1 ' A='' A' >1 ?' A @' A='' A' CB=DA @' E<;<' <JBA66 ' B ;A?<@&' A @' CB='' ;< @<;<@' C1 . ' C<' 1 . G6AFAD6<' 1 = ;B . < ' 9' C1='' E ' I< ?<A F<' C<' 9<<D6<' 0A= ' CA@' D< ;A <@' 611='' AFF . G61F<=&' A @' ; A ' EA=&' 1 ' C<' 91;= ' G6AF<&' C; E ' 1 ' C<' G;1= ' 9' 1 F< <=' C<' D; C<;='' < @V . <' E<;<' A;;<= <@' A @' =< ' ' C<' CT <AB' 9' . D 1=<' CA6A1=&' @1=F I<;<@' ' CAI<' D<< ' ?B16 &' D ' C1='' 6< <;='' ' C<' %BFC<==' 9' C<I;<B=<&' 9'CAI1 ?' 1 =B6 <@' C<' - 1 ?&' A @' ?1I< ' =<@1 1 B='' A@I1F<' ' 0A= &' EA='' F @< . <@' ' @<A C' D ' A' F . . 1==1 &' A @' <P<FB <@' A;=CA6' . A ' @1<@' A ' 1 F< <=&' A @' C<' ?;A @ G;1 ;' A ' . D 1=<N' EC16= ' C<' %B><' 9' < @V . <' EA='' 6 ' ;<6<A=<@' 9; .' G;1= ' A9 <;' CAI1 ?' . A@<' A66' C<' F 0 9<==1 =' <JB1;<@' 9' C1 . ' C<' - 1 ?' . A@<' <' 9' B= ;1A' AGG<A;' 1 ' C1='' F B F16' FCA . D<;&' A @' =<I<;<6 ' ;<G; AFC<@' C<;' E1 C' CAI1 ?' E1=C<@' ' D A1 'A' <E' CB=DA @' 1 ' 0A= ' 9' ;6WA ='N BG ' EC1FC' =C<' F 66 ';<G61<@&" ['' '=C B6@' ' CAI<' ?A1 <@' < B?C' D ' C<' FCA ?< `' C<' EA='' =BDK<F <@" ' C<' D=<;IA F<' 9' A' =<I<;<' = = < .' 9' < 1JB< <'N A @' C<' < ;A F<' 9' . < ' 1 'C<;' AGA; . < =' 1 ' C<' - 1 ?3='' AD=< F<' EA='' = ;1F 6 ' 9 ;D1@@< ' ' ?;<A ' B . D<;' 9' D6<='' E<;<' @1=?;AF<@'N A @' A . ?=' C<' . =' @1=0 1 ?B1=C<@' 9' C< .' hIA='' (A;A@A=&' C<' . A;FC3='' 9AI B;1 <&' EC =<' <6<IA0 1 ' CA@' D<< ' A='' =B@@< ' A='' EA='' C1='' 9A66' C<' ><<G<;' 9' 61<' =<A6=&' @3 61?;<&' EA='' @1= . 1==<@&' A @' A@A . <' @<' C<I;<B=<' EA='' DA 1=C<@' &' ;;A1 <' ' ?BA;@' 9' . B=JB< <<;='' X;A='' ?;A <@' ' C<' A;@1 A6&' ?< C<;' E1 C' C<' E ' 9' (; BA?<' A='' A' G6AF<' 9'=A9< ' 1 A66 &' 0A= ' 1 ' ;< B; '9 ;' C<' F 9<==1 =' EC1FC' C<' . A@<&' A @' C1='' F =< ' '<=G B=<

5EA1Y 1 +1<@ . B @<; A>< A?A1 =C<;= 1 6AE 1F ; . A@<B=@< . A @<@ 9C< - 1 ?#I1C1 @1? A <A;=CA C< =C B6@ @1=?;AF< C< A;@1 A6 1 C<;G;<=< F<A @ I<;EC<6 . <@C1 . E1 C D1 <;;<G; AFC<= B1= : GB A < @ C1= GA1 9B6 =F< <AD;BG 6 ;@<;<@ 1FC<61<B ;< 1;< C< 6A <;F =1@<;<@C1 . =<69 @1=?;AF<@A @ C< LB<< 6 >< @BG C<;;1B . GC A= F<; A1 C1= EA= C< G1 1 9C< EC 6< B; N A @EC16= C< A;@1 A6EA= DB; 1 ?C1= GAG<;= A @=<FB;0 1 ?C1= ;<A=B;<=A C< F B; 1<;= 96 F><@1 F; E@= A;1<@< <@1F1 F ?;A B6A <C<;A @<PG;<== C<1;@<61?C A ECA CA@ CAGG< <@ C< - 1 ?CA@ ;< 1;<@ <;=A166<=AY A @ 1FC<61<B< F B;A?<@D C1= < @=@< <; . 1 <@D<9 ;< @<GA; 1 ? . A>< A 96 A6 <91D; < 9 66 E<@ C< - 1 ?A1 <@A 1 <; I1<EKB= 191<@C1 . =<69 ;<F<1I<@ ;@<;= ;< . A1 A C< C<6 . 9C< A <N A @EC16= C1= < < . 1<= E<; A6;<A@ ;1B . GC1 ?I<;C1= 9A66 ;<AGG<A;<@ . ;< G E<;9B6 CA <I<; C1= @A 1= > E D C< A . < 9

C< 91;= AF D EC1FC 1FC<61<B A <= <@C1= ;< <= AD61=C . < 1 G E<;EA= C< A;;<= 9C< E D; C<;= A;166AF , C< < A A;=CA6 9 ;A F<C< C<;C< - <<G<;1 C< <A6= , EC ;;<= 9C< ,7B<M@7E 11 E<@C<1;<6<IA 1 C< A;@1 A6A @CA@ =C I C< . 0 =<6I<= C1= . = D1 <;< < . 1<= (<9 ;< GB 1=C1 ?C< . C E<I<;1FC<61<B= B?C ADA < ;GB A < @ C< C = 161 9C1= G E<;9B6 9 <= A @ I<;EC<6 . <@E1 61 9AI B;= A @G; . 1=<= C<9;1< @= 9OA= 9 ;6WA =N <=G<F1A66 @1= 1 ?B1=C1 ?+B AB;< = A @ C< +;<=1@< < 1? <BP C< F 91@A = 9 C< G;1 F<EC =<9AI B;C< CB= = B?C ?A1 (B B;?<@ D C< E JB<< = OA= I1=1 <@C< 1 1= <;A C<C<A@ 9A F; E@ 9?< 6< . < 1 =B6 <@C1 . A @ C;<A < <@C1 . E1 C C<9B66 E<1?C 9C1= I< ?<A F< 9 <;C1= I1 6< A @;1@1FB6 B= =F< <@B;1 ?EC1FC C< A;@1 A6 D<61<I<@C1 . =<69 D<1 G<;16 9C1= 619<OA= ;< 1;<@ C1= AGGA A?<9 ;6<A = A @ D<?A 6<I ; G=N DB A C< AGG; AFC V9 C< A6 A; . C C< 6<A = A<= ;< 96<@ E1 C B <<@7$+ A ;<=1= A F<A @ GA==<@ .) ! * ;;A1 < EA= < < B?C 6 ?A= C< LB<< . C<;1 . DB<@E1 C C<1 ;1?B1 ?K<A6 B=A @ I1 @1F 1I< =G1;1 9C< <@1F1=< ;< . A1 <@A C< B; 1FC<61<B F B6@ <I<;D<=B;<= 9C< . ;; E +<;F<1I1 ?CA C< EA= =B96 @< 6 = ; ?A>< A @A;1 ?= ; ><C< 6@ C< - 1 ?CA

C16=' 1FC<61<B' CB=' <P<FB <@' C1=' I< ?<A F<(' C<' L B<< . C<;' A @' C<;' < . 1?;A ' = ' F 1 B<@' C<1;' 1 ;1?B<=(' D C' E1 C1 ' A @' ' 9' OA= ' E1 C B ' C<' >1 ?@ . (' DB ' OA= (' C<1;' ' C<' ; E (' A @'1 ' %<' . ' CA ' ;<=G<F ' 9 ; . 1@AD6<(' =<< . <@' 6 ' D< ' BG ' F . G; . 1= ' 1 ?' C1=' 9;1< @=' A @'6<AI1 ?' C< . ' ' C<1;'9 <' <' 6 '@1= 1 ?B1=C<@' C1 . 0 =<69'1 ' ;;A1 <' D ' C1=' 9;1I 6 B=' ?A66A ; N A @' CAI1 ?' D<F . <' A' E1@ E<;(' =<F;< 6 ' . A;;1<@' +;1 F<==' A;?B<;1 <(' =1= <;' 9' %B><' CA;6<=' ' 1 A66 (' A9 <;' CAI1 ?' EA @<;<@' AD B ' A66' C<' 9; 1<;=' 9' C<' >1 ?@ . (' C<' < <;<@' ;A F<' A ' C<' C<A@' 9' A' DA @' 9' @<=<; <;=' A @' A@I< B;<;=(' A @'K 1 <@' A;=CA6' %B><' @<' . ;< F (' 1 ' A ?B<@ F ' C<' 6A <;(' A' @<=F< @A ' 9' C<' = AD6<=' . ;< F (' A' ?A66A ' = 6@1<;(' A @' A' D; C<; 1 6AE' 9' @1(' A66 E<@' C1 . =<69' ' D<' =<@BF<@' D ' C<' G;1 F<(' A @(' EC< C<;' C<' F =1@<;<@' 1 ' C1=' @B ' ' @<61I<;' ;A F<'9; . ' 1FC<61<B3=' @ . 1 A 1 (' ;' EC< C<;' C<(' E1=C<@' D ' . A>1 ?' 611 . =<69' 9<A;<@(' ' D<' AD6<' ' =<66' C1=' =BD0 . 1==1 ' A ' C<' G;1F<' 9' A' F = AD6<3=' =E ;@(' C<' ;<= 6I<@' ' ;A1=<' A ?B<@ F(' 9' EC1FC' C<' EA=' ? I<; ;(' 1 ' 9AI B;' 9' OA= ' (B ' 1FC<61<B' A 1F1GA <@' C1=' < < . 1<=(' A @' C<' A;=CA6=' @<' 6A' ;F<' A @' FCo . D<;?' < <;<@' A ?B<@ F' A ' C<' C<A@' 9' E ' A6' A; . 1<=(' A ' C<' . . < ' EC< ' OA= ' EA=' <99<F 1 ?' C1=' KB F 1 ' E1 C' . ;< F

C<' 61 = 16<' ; G=' . < ' <A;' A= <6 AB@A; ' . ;< F (' I<; ' 1 9<;1 ;' 1 ' C<'%& ' ()*' 9' C1=' ; G=' ' C<' < < . (' C;<E' C1 . ' =<69' BG ' C<' 6A <;' E1 C' A' 9<<D6<' @< AFC . < N EA=' , 2 =B;; B @<@(' FAG B;<@(' A @' FA;;1<@' AEA ' A' G;1= <;' 6B1@<;' C<' I<; ' < <=' 9' OA= (' EC ' . A@<' ' <99 ; ' ' ;<=FB<' C1 . (' A @' EC =<' EC 6<' A; . '1 . 0 . <@1A <6 ' @1=DA @<@'1 =<69 ' C =<' 9' C<' 9;1< @=' A @&GA; 1=A =' 9' C<' +;1 F<' EC ' E<;<' =<1M<@' E1 C' A; . =' 1 ' C<1;' CA @=(' E<;<' ;<A <@' E1r1 B ' . <;F (' DB ' <; . =' E<;<' . A@<' E1 C' C =<' EC ' ;< . . <@' E1 C' C1 . (' A @' A . ?=' C<;=' E1 C' +B AB;< =' 1FC<61<B' <I<;' 9A16<@' ' ;<?A;@' OA= ' A=' C<' C<1; G;<=B . G 1I<' ' C<' F; E (' A @' C<' G<; . 1 <@' C1 . ' ';<0 1;<' ' B;=(' EC<;<' C<' +;1 F<' A;;1I<@' . ;<' @1=?;AF<@' D ' C1=' F EA;@1F<' CA ' D ' C1=' ;<D<661 ' . ;< F ' EA=' A>< ' D<9 ;<' C<' +A;61A . < ' 9' B6 B=<(' F @< . <@' '@<A C' A @' <P<FB <@(' A @' @1<@' A= A' ;<G< A ' A @' = . <<;<' C;1= 1A ' ' F; E@' 9' C<;=' 6 = ' K# %) . ;< F (C<1;' C<A@=(' ' C<' =FA99 6@(' A @' OA= (' <;;191<@' A ' C<' A;@1 A63=' ;1? B;(' F<' . ;<' JB1 <@' ;A F<

C<' -1 ?(' EC ' CA@' C1 C<; ' D<< ' 1? ;A ' 9' C1=' D; C<;3=' =<F @' . A;;1A?<' E1 C' C<' +;1 F<==' A;?B<;1 <' 1 ' ;;A1 <(' ' D<1 ?' 1 9 ; . <@

9' 1 (' ;<9B=<@' '=A F 1 ' 1 (' A @' 1 IA@<@' C<' @BFC ' I1 C' A' @< . A @' CA # CA;6<='; ' =C B6@' ?1I<' C1=' =1= <;''1 ' C1=' CA @=' C<' ;A1 HD' C<' 6A <;(' C E<I<;(' <=FAG<@(' A @'K 1 <@' C<;' CB=DA @' A ' (;B==<6=& 5EC<;<' A;1<'@<' <@1F1' ;<F<1I<@' C<;' A='A' @AB?C <;' C< IC 6< 9' ;;A1 <'EA=' I<;;B (' A @' A F '9<66' 1 ' C<'CA @=' 9' C<' ;< FC' C< B 9 ; B A <'%B><' CA;6<=Y'AD@1FA <@'1 '9AI B;' 9' A;@1 A6' 1F 6A=' ;A F1=& C1='D; C<;(' EC 'CA= < <@(' I1 C B'F =B6 1 ?' . <(' '6A 'A=1@<' C<'CA & A @' ' . A;; ' C1=' F B=1 ' 6AB@<' ' A9 <;EA;@=' C<' ;< 1;<@' 9; . ;;A1 <' I1 C' C1=' E19<(' ADA @ 1 ?' C1=' = A <=' ' C<' ;< FC' -1 ?(' EC)+)*, +-)*)').⁄0(12.-)3' 40**2.5%.' 6)%32%4' ⁄-)' 7)&**)%3)*' 57'⁄-)' #*2%8)..

0*4&)*2⁄)

C16=' B1=' : 1 ' CB=' < @<AI . <@' ' A B6' C1=' A661A F<' D '9 ;F<(' C<' +A;61A . < ' 9'+A;1=(' 'EC .'C<'CA@' ;<9<;;<@' C<' . A <;

M@' >7#$> ; @+<
B3' ;>7$;'>++>#A'
<M@' ;>77$>@>'B3'

@<F6A;<@' 0A= 3=' . A;;1A?<' I 1@(' @<F;<<@' C<' @B><' ?B16$5 ' 9' I1 6< F<' ' C<'G<;= ' 9' C<'%B><' 9' ;6<A =(' A @' F 91=0 FA <@' C1=' 1 C<;1 A F<' ' <A;' 6A <;' C<' ==< . D6 ' 9' C<' 6<;?' F 91; . <@' C<' KB@? . < ' 1 ' GG =1 1 ' ' C<' B;' 9' . <(EC1FC' ;<F ? 1=<@' C<' . A;;1A?<' A=' IA61@

C<' -1 ?3=' D; C<;' CA@' E' ;< B; <@' ' ;A F<(' CAI1 ?' ADA @ <@' C1=' . C<;' A=' ;<A@16 ' A=' C<' CA@' ADA @ <@' C1=' 9;1< @=(' A @' I1=1 <@' C<' B; (' IC<' 1FC<61<B(' 1 ' C<' . 1@=' 9' D;1661A ' 9s <=(' < @<AI B;<@(' DB' 1 ' IA1 (' ' D A1 ' 9; .' C1 .' A ' AI EA6' CA' C1=' . A;;1A?<' EA=' 166<?A6' =1<B;' 1 ' C1=' . A <;' @1=G6A <@(' 9 ;' C<' 91;=' 1 . <(' =t . <' 91; . <==(' A @' ;< 1;<@' '(6 1=' E1 C' +B AB;< =(' C1=' 9AI B;1 <(' 'EC .' 1FC<61<B' CA@' 6AI1=C<@' 9AI B;='A @' C B;=' <'CA@' . A;;1<@' C1 .' ' <' 9'C1=' ;<6A 1I<=(' 'EC .'C<' D<= I<@' A' . A? 191F<' '@ E; (' A @' CA@' . A@<' C1 .' A' @B><' A @' G<<;(' 1 ' C<' C G<' CA'C<' E B6@'1 @BF<' C<' +;1 F<' ' 1<6@' ' C<' -1 ?3=' E1=C<='M DB' A=' +B AB;< =' E B6@' '=<;I<' C<' A;@1 A63=' I1<E=(' C<' < 1F<@' C1 .' '+A;1=(' A @' DA@' C1 .'=<1M<@' A @' FA='1 ' C<' (A= 1 <(' EC<;<' C<' @1<@

1=' . A= <;' @1@' ';< . A1 ' C<' 6<A=' D= 1 A <' ' C1=' AFF B (' DB' A' <I<' ' FFB;;<@' C;<<' <A;=' A9 <;EA;@=(' EC1FC' ;<@BF<@' C1 .' ' A' =<F @A; ' G =1 1 ' <' 9' B= ;1A' 61I<@' AGA;' 9; .' B1=' : (' A @' C?@' ' FC16@;< ' '1=' =A1@' CA' A' B ?' ?1;6(' @66<' @<' 6A' A < <(' EC ' IA=' D<0 6 I<@' D ' C<' . A;FC(' A @' = B?C' 1 ' C<' I< ' 9' C<' 1=1 A 1 ' A

I' M>7#@A' 'S>A'<M@'<S@+<K03BD7<M' CDQ@' B3'<M@' MBDA@' B3' B77>$+@' $AD@' B3' ! H7>7C' C(#A>?@' @A$C@A' <M@' 7@$ +$+ ' J7>+?M' <M@7@' S@7@' ; >+K' B<M@7' J7>+?M@A' B3'<M$A' #+>0 <7$B+A' MBDA@'>A'<MBA@' B3' >DC@ ; B+<' @' ! D$A@' @') @7?WD7' @') >K@++@' (D ; >#B' UB

A= 6B . ' 9; . ' C1=' = 61F1 A 1 =(' < @<AI B;<@' ' ;< . I<' C<' - 1 ?3=' =G1;1 ' 9' C = 161 ' EA;@=' C1=' LB<< (' A @' 1 ' 1 . <' D; B?C 'AD B 'A' ? @' B @<;= A @0 1 ?' D< E<< ' C< . ' E<I<;' C1=' . A ' D<(' <' 9' B= ;1A' B1; C 9A' %AB' A9 <;' E< E ' <A;=3 = <;161 (' G;<=< <@' ' C<' E ; @' ' +33[Y @1<' 7 C' <G < . D<;(' *8 (' A' = (' EC ' D<FA . <' B1=' :

' C<' G<;1 @' EC< ' C<' ;<1 =' 9' 0; I<; . < 'GA==<@' CB=' B @<;' A' >1 ?' 1 ' A' G<;G< BA6' = A <' 9' GBG166A?<(' 9; .' C<' CA @=' 9' F1 1' ' C<' CA @=' 9%<' B <=(' A @' 9; .' C =<' 9' C<' 6A <;' ' C =<' 9' 1FC<61<B(' 1 ' EC1FC' C< ';< . A1 <@(' ?;<A ' <I< =(' 1 ' EC1FC' ;A F<' CA@' ' A=' < ' 1 <;9<;<@(' E<;<' A>1 ?' G6AF<' 1 ' 0<; . A

C<' . G<; ;' A 611A=(' CA I1 ?' ' FC16@;< (' CA@' FC =< ' A=' C1=' =BFF<== ; 5C1=' F B=1 ?<; . A (' <;@1 A @(' 9' 4 ;1A(' ?;A @= ' 9' <;@1 A @' & &D; C<;' 9' CA;6<=' (' A @' CA@' CA@' C1 . ' <6<F <@' - 1 ?' 9' (C< . 1A(' 1 ' C1=' E ' 619< 1 . <' C1=' u+;1 F<(' <@BFA <@' D ' C<' S<=B1 =(' A @' A ' A@ . 11<;' 9' +C161G' (' E1=C<@' G' @<G;1I<' C<' +; <= A ' (C< . 1A =' 9' 61D<; ' 9' F =F1< F<' C<' 6A <;(' ?;<A 6 ' 1;;1 A <@(' F . G6A1 <@' ' C<' B F16' 9' +;A?B<(' A @' C;<E' 9 B;' 991F<;=' 9' C<' 0 I<; . < ' B ' 9' C<' E1 @ E= ' C<' . <A 1 . <(' A C1A=' @1<@(' A @' W;@1 A @(' D<=1<?<@' 1 ' 1< A' D C<' I1F ;1 B=' (C< . 1A =(' F B6@' ' @1=G;B <' C<' G ==<==1 9' C<' . G<;1A6' ; E ' C<' %1< ' EA=' @1I1@<@' D< E<< ' C<' C1; ' <A;H' +; <= A =' A @' C<' A C 61F=(' DB ' C<' @<9<F 1 ' 9' C<' 6<F ; 9' AP ' . A@<' C<' DA6A F<' 1 F61 <' 1 '9AI B;' 9' C<' 6A <;(' A @' <;@1 A @ EA=' G; F6A1 . <@' . G<; ;' A ' ;A >9 ; (' ' C<' C' B?B= & * ! ' C<' (C< . 1A ' A <=' ;<G61<@' ' C1=' <6<F 1 'D ' 99<; 1 ?' C<1;' ; E ' ' C<' 6<F ;' +A6A 1 <Y' ;<@<;1F>' (' = 1 6AE' 9' C<' - 1 ?' 9' ?6A @(' A @' <GC<E' 9' C<' A@ C 6@<;' 9' 66A @ C<' EC 6<' IA ?<61FA6' 1 ' ;' 9<@<;A 1 ', 9' C< +; <= A ' = A <=' 9' 0<; . A ';<F ? 1=<@' C1 . ' A=' C<1;' C<A@(A @'=<' C1 . ' BG' 1 ' GG =1 1 ' ' C<' . G<; ;(' EC ' =BGG ; <@' C<' A C 61F' <A?B<

;<@<;1F>(' A' G;1 F<' E1 C B ' A6< =' ;' < <;? (' 6 = (' 1 ' A' D6 @ ' DA 6<' 9 B?C ' ' C<' 611 <' B A1 (' <A;' +;A?B<(' ' 6 ' C1=' <E' F; E (' DB 'A6= 'C1=' C<;<@1 A; ' <= A <=' . D 6@< <@' D ' C1=' =BFF<==(' C<' . G<; ;(' F6 =<6 ' A661<@' E1 C' GA1 (' FA;;1<@' EA;' 1 ' C<' +A6A 1 A <(' A @' C;<A < <@ 5 ' <P 1;GA <' +; <= A 1= . ' C; B?C B ' C<' EC 6<' 9' 0<; . A

I' M@' >#><$+><@ ' B+@' B3'<M@' #@?<B7><@A' B3' ! @7 ; >+K' $+' <M@' ?$7?#@' B3'<#$@' LL@7' M$$$@ ' @N<@+C@C' >#B+ ' <M@' <SB' AMB7@A' B3'<M@' 7$G@7 ' B+C' M>C') >DM@$; ' 3B7' $<A' ?>L$<>#

'=AI<'1 ='61D<; 1<=&' C<' IA ?<61FA6' 1 &' EC1FC' CA@' D<< ' E1 C B 'A' 6<A@<;'=1 F?' C<' 91166' 9' C<' +A6A 1 <&' FC =<' 1 ' CA 'FAGAF1 ' C;1= 1A ' &' - 1 ?' 9' %< . A;>&' A @' %B><' 9' 6= <1 ' a * 7b' N A @' C< ' F . . < F<@' C<' =<F @' G<;1 @'D9' C<' C1; ' <A;=3 A;&' FA66<@' C<' %A 1=C' +<;1 @ ' 'EA=' '6<==' 9A A6' CA ' C<' 91;= ' ' C<' +; <= A 'FAB=<N 9 ;' C;1= 1A &' IA JB1=C<@' D ' C<' F<6<D;A <@' 1 . G<;1A6' ?< <;A6=' 166 'A @' A66< = <1 &' EA=' @;1I< 'DAF>' 1 ' C1=' 1=6A @=N' ' C<' EC 6<' 9' SB 6A @&' FC6<=E1?&' A @' 6= <1 ' 1 IA@<@' D ' C<' F JB<; ;=N A @' ' =AI<' C<' ;< . A ' 9' C1=' @ . 1 1 =&' EA=' F . G<66<@' ' =1? ' C<' CB . 161A 1 ?' G<AF<' 9' rD<F>&' 1 ' * ! ' C<' EC 6<' 9' +; <= A ' 0<; . A 'EA=' X . @<;' C<' ><&' A @' C<' FAB=<' 9'61D<; ' 9'F =F1< F<' =<< . <@' @<=G<;A <

C< ' A==< . D6<@' C<' 1 . G<;1A6' %1< ' 9' A 1=D ' a *8"b&' '@1=FB=' C<' %1 9 A 1=D & ?;<A ' JB<= 1 =' EC1FC' 9 ;' E< ' <A;=' CA@' A?1 A <@' C<' 0<; . A ' < . G1;<N A @' E' C<;<'FA . <'A' FC<F>' ' C<'9 ; B <=' 9' C<' B=<' 9' B= ;1A & ' C<'G6AF<' 9'A661<=' <;@1 A @' 6 '9 1 . @'A@I<;0 =A;1<=' A . ?=' C<' A C 61F' 6<F ;=&' EC 'E<;<' A6A; . <@' A ' C1=' A . D1 1 ' A @' C1=' @<=G 1= . ' C< ' @< . A @<@' 9'C1 . ' C<' @1=DA @ . < ' 9'C1=' A; . ' 9' A' CB @;<@' A @' 919 ' C B=A @' . < &' EC1FC' EA=' E' B=<6<==& A @' C<' @1= . 1==A6' 9' C<' 1 I1 F1D6<' 0< <;A6' A66< = <1 ' 'EA=' A ' A 1=D &' A6= &' 61A ' EA=' ;<?B6A <@' C<' =BFF<==1 ' 9' A BA&' EC1FC' C<' . G<; ;' CA@' G;< < @<@' '@1=G =<' 9' A=' A '1 . G<;1A6' 91<9 ' C1=' EA=' C<' =<F @' = <G' EC1FC' ;A F<' >'1 '1 =' 1 <;9<;< F<' E1 C' C<' A99A1;=' 9' C<' < . G1;<N C<' 91;= 'D<1 ?' C<' FFBGA 1 ' 9' C<' A6 <61 <

1FC<61<B' =AE' E1 C' @1=JB1<' C<' G; ?;<==' 9' C<' B=<' 9' B= ;1AN DB C<' 1 . <' EA=' ' < 'F . < 9 ;' ;A F<' G< 6 ' '1 <;9<;< C<' C1; ' <A;A3 A;& 08" (8*' 1FC<61<B' F , < <@' C1 . =<69' E1 C' G; . 1=1 ?' A=' A' =BD=1@ ' & "'"&"'"'"' 61I;<=' A' <A;' ' C<' B ?' -1 ?' 9' E<@< & 0B= AIB=' @ 6GCB=& A6;<A@ '9A . B=' D ';<A= ' 9' C1=' I1F ;1<=' I<;' C< B=F I1 <=' A @' C<' + 6<=&' A @' EA;@=' EC .' C<' < <=' 9' A66' +; <= A B; G<' E<;<' E' B; <@' C1=' 1 "'& , A=' <;@1 A @' FA66<@' C1 . & 1 C1=' G; 9 1 . @' D61 @ <== , #CB;6<@' C1 . =<69' BG ' 0<; . A ' 1F ;1 B=' A <1G=1F&' 1 ' *8 &' A @' A?A1 'A ' C<' GA==A?<' 9' C<' <<>&' EC<;<' 166 '6 ='C1= 619<&' C<' ;< A61A <@' BG ' C<' A C 61F' <A?B<' A66' C<' <I16=' C< 'CA@' 1 961F <@ ' C<' IA ?<61FA6' 661A F<&' A @' G;<GA;<@' ' = ;1><' A' 91 A6' D6 E' D A AFC1 ?' <;@1 A @' 1 'C1=' FAG1 A6' C<' . G<; ;&' 1 ' <;; ;&' C< ' ';<FA66<@ C<' 166B= ;1 B=' A66< = <1 &' EC .' C<' CA@' @1=?;AF<@N A @' C<' E ';1IA6= 1 '?6 ; ' < F 1 . <;<@' <AFC' C<;' A ' B M< ' 1 ' *8 ' 0B= AIB=' EA=' C<

I1F ;& DB ' @1<@ ' C< 91<6@ 9 DA 6<& 6<AI1 ? C< F . . A @ ' A C<;' C<; & %B>< (<; A;@ @< AP< <1 . A; ' C< 6A <;& C E<I<;& A9 <;' ?;<A ' =BFF<==<=& 6 = ' 1 ' *8 ' C< @<F1=1I<DA 6< 9 ;@61 ?< ' A?A1 = C< ;FC0 @B>< <;@1 A;@& C< . G<; ;3=' <6@<= ' = ' C< F JB<= =' 9 0B= AIB=' @ 6GCB=' E<;<& B66191<@& A @ C< B=< 9 B= ;1A D<FA . < F< . ;<A66 G E<;9B ' <;<< @=' C< E<@1=C G<;1 @ 9 C< C1; ' <A;=Y A;& A @ F . . < F<=' C< 9 . 3 C K . @ 6A= ' <G FC& ' EC1FC CA=' D<< ' ?1I< ' C< A . < 9 C< ;< FC G<;1 @

' C< . . < ' 'IIC< ' 1FC<61<B EA=' < ?A?1 ? ;A F<1 ' C1=' =A ?B1 A; ' = ;B??6<& XIC1FC <; . 1 A <@ 6 ' E1 C C< ;<A ' 9 ' <= GCA61A& 1 ' * & 1 ' E166 D< A=' E<66 ' FA= ' A ?6A F< A ' C< = A < 9 B; G<1 ' *87

A6 , FFBG1<@ 1 ' C< ; C A @4 = B C D ' C< GA 1A;@=& EC ' E<;< . A= <;=' 9 C< 16A <=< <;;1 ; 'A @ C<>1 ?@ .' 9 AG6<= , #EA=' @<= 1 B < ' 9 = ;< ? C ;' E166 ' ?6A @& ' C< <I< 9 A' ;<I 6B 1 & >' ' GA; ' 1 ' C< A91A1;=' 9 C< 1 < ' 66A @& A ' C< <PG1;A 1 ' 9 C<" ;BF< 9 E<6I< <A;=& CA@ ;< <E<@ A?A1 = ' GA1 ' C<;' ?6 ;1 B=' EA;' 9 1 @<0 G< @< F<' LB<< ' C;1= 1 A GB;=B<@ E1 C C< E<@<=' C< E ;>' 9 C<;' 9A C<;& 0B= AIB=' @ 6GCB=' N E6116= ' %< . A;>& <PCAB= <@ D ' C< EA;' 9 * 7& C<6@ A6 9 ' =' 9 ;' 0<; . A & =C< EA=' . ;< CA ' <I<;' @1I1@<@ ' C< 6<F ;' 9 AP ' CA@& D ' C< +<AF< 9 +;A?B<& ADA @ <@ C< +; <= A ' FAB=<N DB ' C< 9 B;' F1;F6<=' 9 GG<;' 0<1 . A & ;A F 1A& EAD1A& C< +A6A 1 A <& C< GG<;' C1 <& A @ C< 6<F ;' 9 (;A @< 0 DB;?& = 1 ' @<9< @<@ 1 ' (C< . 1A EA=' F;B=C<@& A @ A66 61< ;<= ' 9 C< < . G1;< EA=' 1 ' C< 1 <;<= ' 9 C< A C 61F <A?B<& 9 EC1FC C< . 1 A6 FC1<9 EA=' C< %B>< 9 (AIA;1A& ;<F< 6 ' 1 I<= <@ E1 C C< +A6A 1 A <& DB ' EC ' EA=' DB ' A ' 1 = ;B . < ' 1 ' C< G E<;9B6 CA @=' 9 C< . G<; ;' <;0 @1 A @' C1=' +;1 F<& 1 ' EC .' A ' 1 @ . 1 AD6< A . D1 1 ' EA=' B 1 <@ E1 C A' 9B;1 B=' 9A A 1F1= . & EA=' A6EA =& 1 ' =G1 < 9 C< E<@1=C 1 IA=1 & C< . A= <;' 9 0<; . A & A @ GB;=B<@ C< ;B1 ' 9 C< IA ?<61FA6 661A F< 1 ' F . . ' E1 C C1=' F B=1 &Y +C161G & - 1 ?' 9 GA1 & ;' ;A C<;' E1 C C1=' . 1 1= <;& 61IA;<M

GA1 & A ' C1=' G<;1 @& CA@ A6;<A@ ' 6 = ' . BFC 9 C< G E<;' 1 ' CA@ G =0 =<==<@ B @<;' CA;6<=' & DB & ' C< C<;' CA @& =C< G ==<==<@ A' <E

I' @ M>G@ A@@+' <M><' M>7#@A' ' CGC@C M$A' CB ; $+$B+A' M@<S@@>' #$$A' J7B<M@7' @7C$ ' +>+C ' M$A' AD??@AAB7' <B' <M@' @ ; L$7@ ' >+C' M$A' AB+' M$#$L' ' M$A' S>A' <M@' B7$ $+' B3' <M@' <SB' J7>+?M@A' B3'<MB' BDA@' B3' DA<7$> ' <MB' B+@' 7@$ +$+ ' >' $@++> ' <M@' B<M@7' >') >C7$C ' @7C$+>+C' 0S>A' <M@' 7>+CAB+' B3' @7C$+>+C' ' >+C' M$#$L' ' <M@' 7@><0A7>+CAB+' B3' M>7#@A'

>1 ?@ . + ; B?A6 A @ +C161G = 166 ;<1? <@ D< @ C< +< 1 =B6A I<; AG6<= 1F16 A @ C< 16A <=< <;;1 ; 1 A6 I<; C< EC 6< 9 (<6?1B . K I<; (B==166 ;A FC< . W 6A @<;= A @ ; 1= ;< FC 9; 1<; = I<; A G ; 1 9 C< ; 61<; F A= 9 9;1FA A @ I<; C< EC 6< 9 C< <E ;6@ <1; 1 AFF ;@A F< E1 C A = ;1F A661A F< E1 C C< . G<; ; 9 C< ;< . A1 @<; 9 C< = A <= 9 CA;6<= C< A F1< . A;FC 9 C< B=< 9 B= ;1A 9 B @ 1 =<69 ;< <= AD61=C<@ A @ G ==<==<@ ?;<A A E<1?C 1 C<3@<= 1 1<= 9 B; G< EC< (1FC<61<B C;<E 1 C< DA6A F< C< =E ;@ 9 ;A F< C B?C A A C 61F A @ C< IA JB1=C<; 9 C< +; <= A = 1 ;A F< C< > C< . B @<; C1= G; <F 1 1 0<; . A A @ . A@< C< IA ?<61FA6 661A F< 1 CA F B ; C1= E<AG D EC1FC D;<A> C< G E<; 9 C< B=< 9 B= ;1A 1 B<; A= C< EA= 9 C< G 61F 9 < ; A 1FC<61<B A= EA= C< FA=< E1 C CA ?;<A - 1 ?@1@ 61I<6 ?< B?C ;<AG A66 1 = 9;B1 =N DB D<9 ;< C1= @<A C C< A 6<A= A@ C< ?6 ; 9 A@@1 ?' A <E G; I1 F< C1= F B ; <' 91 @ C1= ;<F ;@<@ 1 C< C1= ; 9 C< C1; <A;=3 A; 9; . *87 *

1FC<61<B . A@< C<?;<A <= <99 ; = =<F1B;< C< =BFF<== 9 C1= . 161 A; G6A = <' 9 ; . <@" AC 99< =1I< A @ @<9< =1I<" A661A F< E1 C 66A @ A @ E<@< D EC1FC C< =<FB;<@ C< A==1= A F< 9 C< A; . 9 C< +;1 F< 9 ;A ?< 1 C< E B ;1<= A @ 9 CA EC1FC %B>< '(<; A;@ @< AP< <1 . A;' F . . A @<@ C< C1 <' <' =1? <@ A C< =A . < 1 . <9;<=C ;<A 1<= E1 C C< %B>< 9 AI A BA A @ +A; . A A . ?= EC . C< G; . 1=<@ @1I1@< C< 16A <=< <;;1 ; 1= G6A = 9 ;' EA;' < . D;AF<@ A F< 6A @<;= C< C1 < C< A6 <61 < A @ A6 N A @ C< 9 ; . <@ 9 B;' A; . 1<= 1 < @<@ AF =1 . B6 A < B=6 A66 C = < G 1 = <' CB= A <' = ; >< ;A1=<@ C< . @1 A; 9 ;F< 9 C< >1 ?@ . A G 1 ? ;<A 6 =BG<;1 ;' CA EC1FC 1 CA@ C1 C<; D A1 <@ (<61<I1 ?' C1 . =<69 D< A= ?;<A A ?< <;A6 A= C< EA= A = A W= . A C< A;@1 A6 ;<= 6I<@ @1;<F 9; . C1= FAD1 < A66 C< . I< . < = 9 C< A; . 1<= 1 C< 91<6@ C1= < <= C< FC1<9 JBA61 9 A ?< <;A6 EA= D<@1< F< A @ C< @1I1@<@ C< F . . A @ 9 <AFC A; . CA C< ?< <;A6= . 1?C D< A . B BA6 FC<F>' BG <AFC 61<; A @ CA <1 C<; 9 C< . =C B6@ F =1@<; C1 . =<69 =B991F1< 6 G E<;9B6 AF BG C1= E ;<=G =1D161

B ; $+@+?@ ; @+< B3<M@ 7@+?M L@7$BC B3<M@ M$7<K @>7A = >7') $<>&' C$ALBA$<$B+A' B3 $?M@#$@B ' , 2.0' , ,2

C A; . 9 C ; C 1 . @<; A;=CA6 @ CA 166 A @ @ (;WMW I;A K 1 1 BP< . D B;? CA 9 C A <= 0< <;A6 9 66A @ FB.GA1? 9 9 ; C GIB;G = 19 @;1I1 ? B 9 (<6?1B . C GA 1A;@= Z . . A @<@ D + ;1 F C . A= 9 A;1? A EC CA@ < 61= <@ 1 C FAB= 9 C B= 9 B= ;1A EC16= C %B> 9 AI 1F ; . A@<B= C1= D; C<; EA= F . G<66<@ 1 C1= E @<=G1 < = <; I ; A F C + ;1 F 9 A;1? A A@IA F<@ D 6@6 C0 ; c 1 Y# (<6?1B. E1 C 919 << 61 B=A @ . < D< E<< C E @1I1=1 = 9 C A; . 9 C ; C 1 ; @<; F;B=C C< . =<GA;A <6 (B C1= < . <;1 EA= GB 1=C<@ 9 ; C< 9<66 BG C1 . =1 . B6 A < B=6 1 C G6A1 9 IA1 < > 9; . C1 . 919 96A?= A @ <99<F <@ C<1; KB F 1 E1 C C< %B FC F . . A @<@ D C< + ;1 F< 9 0 ;A ?< D<9 ; < Aw= ;1FC C< B 1 <@ A; . G;<=< <@ A 9 ;F< 9 919 C B=A @ F . DA A = A @ . 1?C CA I< <99<F <@ ?;<A C1 ?= DB 1 ? AI< 1 =<69 BG C< . = 9;1?C 9B6 <PF<==<= C< =AF> 9 1;6< . ; B=<@ C< (<6?1A = B @<F1@<@ B 16 C< EC< C<; K 1 C< ;< FC ;' C< GA 1A;@= N C< ;A ' A; . = A @ CB= ?AI< 1 . < 9 ; C< A; ;1I A6 9 C< . G<;1A6 A; . B @<; +1FF 6 . 1 C1# A; . 9 ;F<@ C< ;< FC ; A1=< C< =1<?< 9 BIA1 A @ F . 0 G<66<@ C< . A1 1 A = A < 9 1 AF 1 166 C< < @ 9 C< FA . GA1?

C< ;< FC E<@1=C A; . 9 0<; . A @1I1@<@ 1 =<I<; A6 F ;G= B @<; 61< F . . A @ 9 A;=CA6 @A 6A ;F< A @ C< %B> G<; H = 1 (<; A;@ 9 AP< <1 . A; CA@ 1 9; 9 1 C <=1@<

C< %B> CA;6= 9 ; ;A1 < EC =< A <= . F< C< . A; ;1A?< 9 C< +;1 F<== A;?B<;1 < F 1 B<@ D< FFBG1<@ D ; ;< FC ?A; ;1= = A @ C< C<; & C< F<6<D;A <@ 0A66A= EC D6 F>A@<@ A G ; 1 9 (<; A;@3 A; . 1 A < F< A @ C<6@ CA ?< <;A6 C1 . =<69 1 FC<F> A A; ;<D;66F> 1FC<61<B F 91@<@ A =<F @ A; . 9 919 << C B=A @ . < C< A;@1 A6 6A A6< < EC =BFF<<@<@ 1 <99<F 1 ? A KB F 1 E1 C (<; A;@ A @ ;<61<I1 ? C1 . 9; . C1= G =1 1 C< D6 F>A@< 9 A < F< EA= ;A1=<@ DB 9A . 1 < A @ @1=<A=< CA@ A9661F <@ C1= A; . E1 C @1;<9B6 9 ;F< N A @ EC< A9 <; 1 = @1=A= ; B= ; < ;<A 1 ; < < <;<@ < M 1 EA= ;<@BF<@ < CA69 C< %B> 9 ; ;A1 < A6 C B?C D<A < A D<661A;@ D A ;F< ;<F I<;<@ A G ; 1 9 C1= @BFC 9; . EC1FC C< EA= 1 . . <@1A <6 A9 <; EA;@= <PG<66<@ D A C1; @ A; . EC1FC B1= : F . . A @<@ 1 G<;= C< - 1 ? A < . G <@ <99<F ? ;<A . I<0 . < C< C1 N C< <I<; F; ==<@ C< ;1I<; X A @ ECA ; < A1 <@ 9 GBD ' '

@1;<F <@A?A1 = C< A;@1 A6E C EA=AFFB=<@ 9A6 C<166= 9 ;A F<
(B C<6A <;=BG<;1 ; 9<A; ;AI<;=<@ C< . A==<= 9 1;;1 A <@G< G6<
B ?BA;@<@A @G; F<<@<@ C< V <6 @< 166<9; . EC< F<C<FA66<@
 A; . = C< D6<==<A @ CWIA;1 B= ;A@1 ?D @1<=9 ; C<@<9< F< 9 C<
>1 ?@ .

 B 1I<;=A6 < CB=1A= . =BFC A= EA= E1 <==<@ 1 @A;><;@A = E
=<1M<@BG C< A 1 < G; I1=1 =A @A; . = G B;<@1 9; . A66
@1;<F 1 = N D6<=F1 1M< =A @A; 1=A = < ; 66<@ C< . =<6I<= A= I 6B 0
<<;=A @A 61< <@ 9A . C A A; . 9 9 ; C B=A @ . < . A;FC<@
 @;1I< C< < <. 9; . C<>1 ?@ .

C<1 . G<;1A6?< <;A6=@1@ AEA1 C< =6AB?C C<1;A; . DB;0
@< <@E1 CG61 . @<;EA= E<A>< <@D 1 @1=F1G61 <A @@<=<; 1 A @ C<
CA= < <@ ;<F; == C<9; 1<;N BG EC1FC A66 C<9 ; ;<==<= 9+1FA;@
E<;<;< A>< D C< ;< FCN C< IA61A @<9< F< . A@< D A1 S<A @<
 = <CAI1 ?A><A@ FC<F><@ C<G; ?;<== 9 C<1 IA=1 1 (B;?B @ Y
 C1;@A < . G . A@< D C< GA 1A;@= C<=1@< 9 C< + ;< <<= EA=
 . ;<9 ; B A1D A @ ;< FC = 16 EA= @<61I<;<@ 9; . 9 ;<1? 1 IA@<;=
EA= C<;< C E<I<; . <;<6 A @<9< =1I< EA; A6 A D6 @ I1F ;
D A1 <@ D A;=CA6@< ;<JB1 A @ C< %B>< 9 AI I<; C< . 0
G<;1A61= = <A; A>< A??1 ;<CA@ ;<=B6

61<9 66 E1 ? <A;a *82b EA= @1= 1 ?B1=C<@ D C<@<A C 9=<I<;A6 ;
C< = I<;<1? = < ?A?<@1 C< EA; C< . G<; ; <;@10
A @ @1<@A9 <;CAI1 ? CA@ C< -1 ? 9 1 . ?A; C1= A @11 A @ 9
= <6<F <@A= C1= =BFF<== ;A @ ;A F<6 = 1 = E A61A =AI A @
661<= C<%B>< = 9 . 1 BA A @ AI C< EA;CA@F
1 B<@ A66 C<9; 1<;=1I1 C B =BFF<== A= E1 C B A 9 ; . 1@AD6< ;<
I<1 =<=A @ C< 6 1 . G ; A . 161 A; 9AF 9 C1=FA . GA1? EA= C<<IAFBA0
1 D C<%B>< @< CA 9 C< A6 <61 <9; . EC< F<C<EA= @;1I<
D C< 6@A661<= 9 ;A F< C< O;1= =EC CA@ E B; <@A?A1 = C<;
C< EA;EA= F 1 B<@1 *8 E1 C ;<=B6 = B 9AI B;AD6< ;A F<
  C< ; C 1 EA= 9 B @ <F<==A;   ;A1=< C<=1<?< 9 FA . GA1? 9
A1 . <; A @ C< GA 1=C 9; 1<; @<=G1 < C< . A;1
1 . <=BFF<==<= 9 C< ;FCD1=C G 9 (;@<ABP B;@1= C< ;< FC E<;<
D<A < D C< @ . 1;A6 9 A= 6< A @ 9 ;F<@ ADA @ C<=1<?<
A;AD1A C< I1F ; D A1 <@ D C<1;A66 %B>< I1F ; 9 C<
(<;AA;@ 9 AP< <1 . A; A6 < F . GW =A <@ C< . C<
C1 <9 ;= . A @1=A= <;= %B>< (<; A;@D<=1<?<@ C1 < > <9F6@ *8

9<6@' S C '@<;' Q <; 6f C11; ;1<@' ' C<' ;<61<9' 9' C1=' E f IA JB1=C<@' C<'
<1 . A;1A =f A @' 9 ;F<@' C< . ' ';A1=<' C<' =1<?<f EC< ' =B@@< 6 ' (<; A;@f
EC ' '6 ><@' BG 'A=' IA JB1=C<@f ;<AGG<A;<@' B @<;' C<' EA66=' 9' C1 < '
9<6@f =B;G;1=<@' C<' . G<;1A61= =' 1 ' C<' 1 P1FA 1 ' 9' ;1B . GCf FB '
C< . ' 1 ' G1<F<=f A @' . A@<' G;1= <;=' 9' C<1;' 9 B;' ?< <;A6=f A . ?= ' EC . '
EA=' C<' F<6<D;A <@' S C ' @<;' Q <; C' ' EA=' 1 ' C1=' < ?A?< . < ' CA '
G<;1=C<@' C<' %B><' @F' CA f C<' C<; ' EC ' CA@' D<< ' C<' 6<A@<;' 9' C<'
;< FC' A6I1 1= =f C<' ?< <;A6' 9' C<' A; . ' 9' C<' A6 <61 <f A @' C< ' A'
=1 . G6<' I 6B <<;' 1 ' C<' A; . ' 9'%B><' (<; A;@

C<' I1F ; ' 9' C1 <9<6@' EA=' C<' 6A= ' AFC1<I< . < ' 9' %B><' <1 . A;f
EC ' @1<@' 1 ' C<' 9 66 E1 ?' <A;' a *8!b' 9' GCB=f A ' C<' A?<' 9' C1; =1P'
<A;=f 6<AI1 ?' B AFF . G61=C<@' A66' C<' IA= ' G; K<F =' EC1FC' C<' CA@'f F 0
F<1I<@' 9 ;' C<' A??;A @1M< . < ' 9' C1=' C 1K=<' ;A F<' GB;FCA=<@' C1=' F 0
JB<= =' 1 '0<; . A f A @' C1=' A; . , #C<' F . . A @' 9'EC1FC' EA=' ?1I< ' ' C<'
%B><' @<' ?B<I166< , F; ==<@' C<' C1 <f 1 ' F F<; ' E C' C<' B ' @<'
0B#D;1A f A @' FA;;1<@' ' C<' FA . GA1? ' @B;1 ?' E ' <A;=' D< @'
C<' ;1I<;f E1 C B ' A ' @<F1@<@' =BFF<==f A @' A ' C<' =A . <' 1 . <' E1 C B ' A ' '#
@1=?;AF<

' *8!' C<' - 1 ?' @<=1;<@' ' D<' G;<=< ' 1 ' G<;= ' A ' C<' G<;A 1 =' 9'
L@7><$B+A'$+' A; . ' 1 ' 6A @<;=Ñ DB ' C<' =BFF<==' ' C<' =1@<' 9' C<
6@<;=f *8!' GK < FC' EA=' F 91 <@' ' C<' FAG B;<' 9' <=@1 f EC1FC' A'
<166<;A <f C<' - 1 ?3=' ?;A @ . A= <;' 9' A; 166<; f FA;;1<@' B @<;' C<'
A;FC3=' #I ' < <=' a9 ;' EC1FC' C<' ;<F<1I<@' C<' . A;=CA63=' DA ' ' C<'
D;<AFCbÑ EC16=' +1FF 6 . 1 1' IA JB1=C<@' <A;' C1 I166<' A C<;' ;< FC'
A; . 'B @<;' <BJ 11#;<=' CB=' < @<@'1 ' C<' ; C' C<' FA . GA1? ' 9' *8!'
' EA=' = . <ECA ' . ;<' D;1661A ' 1 ' +1<@ . ' C1=' F B ; ' EA=' A ' CA '
1 . <' A' I<; ' <=' 9' 1 ;1?B<=' A;@1 A6' AB;1F<' A @' C . A=f +;1 F<'
9' A;1? A f D; C<;' 9' C<' 6A <' @I;><f @1=GB <@' C<' ;<?< F ' E1 C' C1='
E1@ Ef C;1= 1 <f @AB?C <;' 9' < ; ' ' C<'D; C<;= 1 6AE' 9' C;1= 1 <'
D A1 <@' C<' =BGG ;' 9' C<' - 1 ?' 9' GA1 f A @' G; . 1=<@' ' @<61I<;' C<'
= ; ?' G6AF<=' 9' +1<@ . ' 1 ' C1=' CA @=' C<' ;<?< ' 1 . G6 ;<@' C<'
A==1= A F<' 9' C<' - 1 ?' 9' ;A F<' C<;' D; C<;Ñ A @' 1FC<61<B' G6AF<@' A '
A; . ' B @<;' C<' F . . A @' 9' A;@1 A6' A6< <f IC f B @<;' G;< < F<' 9'
G; <F 1 ?' C<' = ' 9' 1F ; . A@<B=f 1 IA@<@' C<' CA69' 9'C1=' A <=f A @'
C< ' @1<@' 9'A' F A?1 B=' 9<I<;' ' 1FC<61<B' AGG 1 <@' A ' AD6<' =BFF<== ;'
' C1 . ' 1 ' C<' G<;= ' 9' < ; ' @<' 1 <f B ' 9' A;F B; f EC ' ;< '
I1F BA66<@' A=A^f C< ' D<=1<?<@' D ' C<' GA 1A;@=f A @' <99<F <@' 1 ' A@ . 1;AD6<

" 9

;@91;' A' @1991FB6 ' ;< ;<A ' 9; .' 611A;1' ' A11? A 1 ' C< G;<=< F< 9' 61<
. BFC' 6A;?<;' A; . 1<=' 9' +;1 F< C . A=' A @' %<' W?A <M C<' GA 1=C'
? I<; ;' 9' C< 16A <=< <;;1 ; EC .'C<'IA JB1=C<@' A ' C< ?6 ;1 B='
DA 6<' 9' A' A

C< G;1 F1GA6' D<661?<;< ' G E<;= ;A F< C< . G1;< A @' GA1 1 '
=G1 <' 9'= . <' GA; 1A6' =BFF<==<= ;<AG<@' '9;B1 =' 9; .' C1=' @1=A= ; B=' EA;1 '
E611FC' C< . 1 1= <;=' 9'+C161G' 'A @' B1=' : I A;<M A @' 1FC<61<B
'= ' @<=G<;A <6 ' F < @<@ ' C< E ' >1 ?@ . =' E<;<' <PCAB= <@ A @' 1 ' <AFC'
C<;<' FFB;;<@' =1 . B6 A < B=6 ' A' G GB6A;' B D;<A>' EC1FC' 6<@' ' I<; ' @190
9<;< ';<=B6 =

'%B;1 ?' C< 6A= ' <A;=' C< AP<=' 1 ' ;A F<' CA@' D<< ' ;A1=<@' 'A' C1 . @;<@'
. 1661 =' EC1FC' EA=' @ BD6<' C< A . B '6<I1<@' 1 ' C< 1 . <' 9' R+A@7K'$+' 7>+?@'
8 5' ' C<1 96<P1D6<' A;@1 A6' . A@<' C1 . =<69'<JBA66 '9 ;' RYtS>7'
. 1@AD6<' 'A66' F6A==<=' 9' C< A 1 ' C< G ;' A @' C<' ;1FC' ' C< E<A>'
A @' C< G E<;9B6' <'=<1M<@' C<';< =' 9' C< V <6 @< 166<' =CB 'BG'1 ' C<'
(A= 166<' C<';< <;=' IC ' @A;<@' ' F . G6A1 A @' G; C1D1 <@' C<' +A;61A . < '
9; .' A99 ;@1 ?' C< .' G; <F 1 ' (B '1 'EA=' C< G< G6<' AD I<' A66' EC 'E<;<'
;B1 <@' D ' C< EA;' A @' C< AP<= , 9' EC1FC' C< C<A I1<= ' DB;@< '9<66' BG '
C< G<A=A = , CA@' D<F . <' 1 6<;AD6<' C< G 66 AP' <=G<F1A66 ' EA=' 6<I1<@'
BG ' C< .' E1 C' 9;1?C 9B6' ;1? B;' C< 'E<;<' C<6@' 'D<' D B @' 6 ;' <AFC'
C<;' 1 ' C<1;' I166A?<=' A @' 9;<JB< 6 ' EC< ' C<' B CAGG ' E;< FC<=' CA@'
<PCAB= <@' C<1;' ;<= B;F<=' 1 ' GA 1 ?' C<1;' E ' =CA;<' C< '9 B @' C<1;'
F; G=' C<1;' ? @=' A @' <I< ' C<1;' G<;= A' =<1M<@' 1 ' ;@<;' '=A 1=9 ' ECA '
EA=' @B<' 9; .' C<;=' <I< 'G ;<;' CA ' C< . =<6I<=' A ' 9' C<=<' B 9 ;0
B A <' G<;= =' CB=' F;B<66 ' C; I '1 'G;1= ' E<;<' G; <F <@' A @' =< ' A '
61D<; 'D ' C< B;' 9' 1@=' 9' B< ' EC =<' KB@? . < =' E<;<' FA F<66<@'
D ' C< - 1 ?3=' B F16' C<=<' ;1? ; B=' . <A=B;<=' E<;<' GB;=B<@' E1 C'
1 F;<A=<@' =<I<;1 ' A @' A '6< ? C' @;1I< ' '@<=GA1;' . A ' 9' C< 1 CAD10
A =' 9' E<;' ; . A @ ' EC 'E<;<' F < . G B B=6 '@< . 1 A <@' 9 '
'aO ' A><@ 9<< b' A '6< ? C' >' BG' A; . =' A @' < ;< FC<@' C< . =<6I<='
' C< =6 G<=" 9' I;A FC<=

;<1? ' ; G=' B @<;' 6 <6' OA==1 ' @; E <@' C1=' 1 =B;;<F 1 '1 ' C<'
D6 @' 9' C< 1 =B;?< =' 9 <;' C< = 6@1<;=' FA . <' C< KB@?<=' A @' <P<FB0
1 <;=' 1FC<61<B' =<6<F <@' C< CA F?66 ;' W?B1<;' 'AI< ?< C< A6'
AB C ;1 ' C< GA;61A . < ' 9' ; . A @ ' EA=' =B=G< @<@' A66' 9;A FC1=<='
=BGG;<==<@' A @' A ' < ; . B=' =B . ' 6<I1<@' ' C< F1 ' 9' B< ' W?B1<;'
@FF6A1 <@' CA ' C< EC 6<' G; I1 F<' =C B6@' D<' ? I<; <@' D ' C< AD= 6B <' I1

C16= 1FC<61<B CB=1 961F <@C<A I D6 E= C<C1?C A;1= F;AF C<
. B69 G61<@9 ; C<F6A==<=D< <A C C< . 991F<= 9C B;A @GBD61F<. 0
G6 . < =N A @ <9C<. =1F<AD6<C 9C1=AF =1= C<F;<A 1 9
< @A =9 1 A F<EC .C<1 I<= <@. C I<; <P < =1I<A@ . 1 1= ;A0
1I<A @KB@1F1A6G E<;=A @ C<;<D A6 . =F . G6< <6 A 1C16A <@ C<
;< . A1 =9<B@A6G E<;G ==<==<@D C<G; I1 F1A6? I<; Z;HA f 96
;= C<=< < @A =E<;<FC =<9; .A . ?= . < 9 1d
G<;= A6 1 . G ; A F<A @E<;< C< . <1'<F;<A B;<=A @ @ F16<1 = ;B0
. < = 9C<-1 ?3= B F16EC1FC 1 F<==A 6 < @<AI B;<@<1 C<; D
I1 6A 1 ? ; . 1=1 <;G;< 1 ? A . A== 9G;1I16<?<= A @ AFJB1;<@ ;1?C =
<P < @1 =AB C ;1 1 <I<; @1;<F 1 A @ =BDK<F A66 C<9 ;F<= 9C<
A< 1 = = 6<A @F< ;A6F ; 6 9 <;CAI1 ? CB=ADA=<@ C<A;1= 0
F;AF 1FC<61<B . ?<@ C<-1 ? @<G;1I< C<+A;61A . < = 9A66G 61 1FA6
G E<; A @ B1= : ;@<;<@ C< . 9 ; CE1C ;<?1= <; 611= <@1F =
E1 C B A G;<61 . 1 A; <PA . 1 A 1 A @DA;<6 G<; . 1 <@C< . A><
A 9< I D=<; IA 1 = JB<= 1 = 9 91 A F< A . A?1= ;A <=CAI1 ?
<PF6A1 . <@A?A1 = =BFC A @<=G 1= . A= C1# C<1; 991F<= E<; <=BGG;<==<@
1 ;@<; CA C<EC 6<D @ 9C< . A?1= ;AF . 1?C B @<;= A @ CA 1
. <;<6 <P1= <@D C< -1 ?3= ?;AF1 B= G<; . 1==1
C< A;@1 A6 AFF ;@1 ? C1= 'E <PG;<==1 @< <= <@ C< =CA . = A @
@<6A = 9C =<D @1<= EC1FC ;A1=<@ @1991FB6 1<= AD B <I<;
C1 ? <9 GG =<@ A6= C<G;<< =1 = A @ G;1I16<?<= 9
C<F6<;? EC BG 9 C1= G<;1 @ CA@ <I<; GA1@ AP<=N A @A C<=A . <
1 . < CA C<EA= G; C1D1 1 ?1 C< A . < 9C<61D<; 1<= 9C< ;< FC
CB1FC C<=< @1 ? 9+< <;3= G< F< . <C<6A1@A <; . B= C G =
BG 1 A @ < 9 ;F<@GA . < 1 =G1 < 9C<A A C< . A= 9C< 6 <<
C< F6<;? C< D161 C< GA;61A . < =C C 1;<I<; @A;<@ B <; .
B; . B;9 ; ;A F<A @1 = -1 ? CA@ D<< < =6AI<@D 1FC<61<B C<
@<=F;1G 1 ?1I< D C1= 1 1= <; 9C1= I;A G 61F CA= A <; ;1D6< =1? 1910
FA F< [<I<; I< B; < B @<; A><A C1 ?&C<=A1@ [E1 C B CAI1 ?
E<66F =1@<;<@1 N DB EC< F< CAI<9 ; . <@A ;<= 6B 1 A@IA F<
= ;A1?C . < @N I<; C; E . E @ E <I<; C1 ? 1 . GA C
A @ C< F I<; A66E C . ;<@ ; D< `
1= G;1@<E B6@A66 E ;1IA6 <1 C<;1 G E<; 1 . A? 191F< F< ; 1
A6< = 9;1< @A= 1= <I<; ; B6 ?;<A . A 61 <;A ; . < G g #A1 9
A @@<=1;1 ? 91P A @G 61=C C<6A ?BA?<C<CA@ C<?6 ; F @F . Y1 d7Y
9 9 B @1 ? E1 C C1= I1<E C< ;< FC FA@<. 9EC1FC

D<FA . < G ==<==<@ A ' 6< ? C 9 C< F G ' 9 A ' ;<A ' 9 A661A F< D< E<< ' C<
GA 1A;@= A @ C< F =G1;A ;=(A @ =< ' 1 ' ' B1=
1 J A;= EA= 1 . . <@1A <6 ' =<1M<@(?< 61<;' E1 C C< B ?' %< C B(
A = ' 9 C< F<6<D;A <@ C1= ;1A ' 9 CA ' A . <(C1= 9;1< @ A @ F 91@A (
DB ' ' C1= AFF . G61F<N C< %B>< @< (B166 ' EA= . A@< G;1= <;' 1 ' C<
. 1@= ' 9 C< A; . ' 9 (k A6 (' C< F . . A @ 9 EC1FC C< CA@ D<< ' AG0
G 1 <@ ' C< - 1 ?' JB1 <@ C< +<;G1? A ' FA . G(A @ CA@ C1 . =<69 ;A =0
G ; <@ ' A;A=Fp (EC<;< 6A ' C< A;@1 A6(A= A9961F <@ I1 C =1F> <==' A @
1 91; . 1 1<= A= C1 . =<69 ' 1FC<61<B D; >< 9 ; C 1 ' A ;;< ' 9 ;<G; AF61<= N
A @ B1=(A9 <;' <PFB=1 ?' A @ KB= 11 1 ?' C1 . =<69(;@<;<@ C1= =BDK<F = '
D< ' C1= 1 1= <;' A= C1 . =<69 ' ' C< A;@1 A6 G; F<<@<@ 3 ' = D ' C<
C <(1 ' A DA;>' EC1FC E<@ < F A1 1 ?' C1= E ' B ?' G;1= <;=' '
F . . 1==1 ' EC= G< <@ ' ; ' C< . ' C< F;1 . < 9 1 J A;= EA= '
G; I<@ N D11 ' C< F EA;@6 ' F 9<==1 = 9 C< %B>< @3 ;6FA = @<= ; <@
C1 . ' 1 J A;= REA= F @< . <@ ' @<A C A @ <P<FB <@ P<FB1 ' g
a 1C C< B ?' %< C B(EC ' EA= ?J16 ' 9 ' CA I1 ?'
@< B F<@ C1= 9 1< @ ' C< %B>< 9 (B166 ' 6 = ' C1= G;1 '
F1GA61 (DB ' D A1 <@ C1= GA;@ ' 1 ' <PFCA ?<' 0 A= ' 9 ;6<A = D0
A1 <@ G<; . 1==1 ' ' 61 I< A ' (6 1= 1 'G;1 I A <
1FC<61<B(=A 1=91<@ A @ A I< ?<@(=< ' B ' 9 ;' +A;1=(A @ K B; < <@ 1 '
;1B . GC ' 1= ?BA;@= FA;;1<@ C1 . ' ' C<1;' =C B6@<;= 1 ' A =G<F1<= '
9B; 1=C<@ FCA . D<;(A @ ' C1= < ;A F< 1 ' F1 1<= C< CA@ C< ?A <= EC1FC
E<;< ' A;; E ' ';<F<1 I< C1 . ' GB66<@ @ E ' ' EA= CB= CA ' C<'
;A I<;=<@ ;A F< 9; . ' = ' C1= E ' GA6AF<(EC<;< C<'@1=G6A <@'
6BPB; ' I<; ' =BG<;1 ;' ' CA ' 9 C< . A;FC
C< LB<< . C<;' @1<@ 1 ' 1 @1?< F<# A ' 6 ? <(A @ 1FC<61<B'
9 66 E<@ C<;' =C ; 6 ' A9 <; EA;@= ' C< . D ' C< - 1 ?
EA= =<< ' ' = . 16< @B;1 ?' C< A;@1 A6= A? (A @ A9 <;' <@1F1 A @ g
C1= 1 1= <;= @<A C F 6@6 ' D=<; I<@ , [' <<(C E G 61 1F
1= @<A C `' 1FC<61<B3= < <= CA@ =FA;F<6 ' (D<< ' F6 =<@(EC< ' C<
- 1 ?' A ' F< ADA @ <@ C< F B;=< GB;=B<@ D ' C< A;@1 A ' C<
G;1= = E<;< C; E ' G< (A @ DA 1=C . < = F<A=<@ ' < @V . <(6D <B9(
(A== . G1<;;<(A @ 0 B1=< ;<AGG<A;<@ A ' B; (A @ G;<6B@<@ D ' < . G
JBA;;<6= C< = ; . = EC1FC E<;< ' @1= B;D C< ;<1? ' AD B ' ' F . . < F<
B1= : 1 K 1 ' 9AF (6 ' =B; I1 I<@ C1= <;;1D6< . 1 1= <;' =1P FA C 9 . A
. C=(A @ @1<@ A ' CA <AB <B9(A1 ' 0<; . A1 (A ' 9 ;
E ' <A;= 9 A?<' ' 9<E @A = DF6D; ' <PG1;1 ?' C< CA@ . 1 A <@ <

; ; ' 8 8 ' ! -' ' > ' 0' 8 #=' : !>' ' 8 -'

9' B= ;1A' ;<?< (A @' OA= (C1=' D; C<;(61<B < A ?< <;A6' 9' C<' >1 ?@ .'N K 1 1 ?' E1 C' C< .' A' B F16' 9' <?< F (B @<;' C<' G;<=1@< F ' 9' @W' ' C<' 9 I@ ?' @A ' C<' CA@' C<' %ABGC1 (C< ' 91I<' <A;=' 9' A?<(DAG 1M<@(A @' CAI1 ?' CA@' C1 .' D; B?C ' 1 ' C1=' FCA . D<;(A=><@' C1 .' C E' C<' E B6@' D<' A . <@ ' [' ' FA66' . =<69' B1=' : &`' ;<G61<@' C<' FC16@' [ ' < ( . ' = , ' < 1Q' =A1@' C<' <PG1;1 ?' . A;FC ' C1=' E ;@' A6 <' A B F<@' A' >1 ?' [ +< G6<' E<;<' = ' E<A; &Q' =A =' A' F < . G ;A; ( [ 9' C1=' ? I<; . < ( CA ' A66' C<' E ;6@( <I< ' 1 F6B@1 ?' C =<' EC ' E<;<' X . @<;' D61?A 1 =' ' C1 . ( E<;<' A P1 B=' 9 ;' C1=' @<A C `

C1=' >1 ?(A6 C B?C' D;AI<;' CA ' C1=' D; C<;(EA=' A=' @<= 1 B <' A=' C<'

M@' ?M>7>?<@7A

93 . ;A6' = ;< ? C' A @' 91; . <==' <' 6 I<@' ' <(A @ ?6 . (=B=G1F1 B=(K<A6 B=(A @' 1 F = A ' @=' C<' EA=(C1=' 9AI B;' <PG =<@' 1 =' DK<F ' 'A=' . A ' @A ?<;=' A=' C1=' CA ;<@' ' 9<<D6<' ' ;<1? ' D ' C1 . =<69(C<' EA=' F =F1 B=' 9' C<' 9AF (A @' C1=' EA=' C<' =<F;<' 9' C<' 6 ?' A=F< @A F ' I<;' C1 .' G ==<==<@' D ' A;@1 A6' 1FC<61<B(EC ' EA=' <I< ' AFFB=<@' 9' CAI1 ?' <PF1 <@' ; BD6<=' A ' C . <' A @' AD; A@' 1 ' ;@<;' ' ;< @<;' C1 . =<69' = 166' . ;<' 1 @1=G< =AD6<' ' C<' 9<<D6<' ' . A;FC(C<' AFF . G61F<' 9' C1=' ;A ' . ?' C<' AF =' EC1FC' < . A A <@' 9; .' C<' AF BA6' E166' 9' C<' +;1 F<(EC .' 96A <;<;=' CAI<' =B; ' A . <@' [' C<' SB= (N C1= ; ' F1 <=' C<' I E' D ' EC1FC(' ;<F I<;1 ?' 9; .' A ' 166 <==(C<' G6AF<@' C1=' >1 ?@ .' B @<;' C<' G; <F 1 ' 9' C<' 1;?1 ' B1=' : (1 ' C<' < <=' 9' G = <;1 (1=' DB ' A' =CA@ E' D ' C<' =1@<' 9' 1FC<61<BN' A @' E<' CAI<' A ' 1 = ;BF 1I<' G1F B;<' 1 ' C1=' 9<<D6<' . A;FC' I 6B A;16 ' D E1 ?' <I< ' B 16' C1=' @<A C' D<9 ;<' C<' ?< 1B=' 9' A' CAB?C ' 1 1= <;' EC .' C<' CA <@(A @' E1 C B ' EC =<' A==1= A F<' C<' 9<6 ' CA ' C<' EA=' 1 FAGAD6<' 9' ? I<; 1 ?

' C<' FCA;AF <;' A @' AF =' 9' A;@1 A6' 1FC<61<B' E<' =<< ? @' A @' DA@' 1 1 . A <6 ' D6< @<@'N 61?C ' A @' =CA@<' = ;1>1 ?6 ' ;A= <@' ' =BGG ;' C1=' B @<; >1 ?=' A @' C1=' K1PB; ' C<' G1 16<==6 '?; B @'@ E ' C<' G< G6<'N A @' C<' <PG< =<=' 9' C1= C B=<C 6@' A6 <' A . B <@' ' . ;<' CA ' 9 B;' . 1661 =' ' C<' C<;' CA @(C<' 1 F;<A=<@' C<' G E<;' 9' C<' >1 ?@ .' D ' ;?A 1M1 ?' 1 =' . 161 A; ' 9 ;F<=' ' A' 9 ; . 1@AD6<' =FA6<(D ' F;<A 1 ?' A' A6' A (A @' D ' F;B=C1 ?' C<' ;< FC' + ; <= A =' A=' A' G 61 1FA6' GA; ' E1 C B ' 1 <;9<;1 ?' E1 C' C<1;' ;<61?1 B=' D<61<9 ' <' EA=' C<' 91;=' ' ;< @<;' ;A F<' C<' . =' 1 96B< 1A6' G E<;' 1 ' B; G<N' A @' 1 ' E<@' ' C1 .(A . ?=' C<;' F 0 JB<= =(CA ' 9' B==166 ' 1 ' C<' = B C(A @' 1 ' C<' ; C' CA ' 9' C<' G;1

F1GA61 ' 9' <@A ' EC1FC' CA@' D<< ' A' G<;G< BA6' 9 FB=' 9' 1 ;1?B<=' A @' C< <= AD61=C . < ' 9'96 PB1=C1 ?' F 6 1<=' 1 ' A A@A' A @' C<' 166<=' ' EA=' C<' A6= ' EC ' D ' =BGG ; 1 ?' C<' +; <= A =' 9' 0<; . A ' A?A1 =' B= ;1A' F = 61@A <@' C<' 9A . B=' = = < . ' 9' C<' DA6A F<' 9' G E<;' 1 ' B; G<N DB ' 19' 1 ' . A ' ;<=G<F =' C1=' 9 ;<1? ' G 61F ' EA=' AD6<' A @' 91; . ' C<' 1=' KB= 6 ' ;<0 G; AFC<@' E1 C' CA I1 ?' <?6<F <@' C<' GG ; B 1 1<=' EC1FC' FFB; ;<@' ' C1 . ' 9'61?C < 1 ?' C<' 1 6<;AD6<' DB;@< ' D ; <' D ' C<' G< G6<' 9 ;'= ' . A ' EA;=' - 1FC<61<B' ' 6 ' @<=1;<@' CA ' C<' DA6A F<' 9' G E<;' =C B6@' D<' . A1 0 A1 <@' DB ' CA ' A66' C<' A 1 =' <PF<G ' C1=' #I ' =C B6@' D<' CB . 161A <@N A @' C<' EA=' ;<A% ' C<' AB C ;' 9' CA ' I1 6< ' A @' A??;<==1I<' G 61F ' EC1FC' EA=' DB ' ' E<66' 9 66 E<@' D ' C1=' =BFF<== ;' AMA;1 ' D ' B1=' : ' A @' 1 ' B;' E ' @A =' D ' A' F JB<; ;' @<= 1 <@' 9 ;' <I<;' ' C<' 9A . B=' A @' EC1FC' . A@<' C<' ?6 ; ' 9' A' A 1 ' F =1= ' 1 ' C<' ADA=< . < ' A @' CB . 161A0 1 ' 9' A66' C =<' A; B @' 1 , A' G 61F ' A6EA =' 9A A6' 1 ' C<' 6 ?' ;B ' A @' A' = B;F<' 9' <;;1D6<' ;<AF 1 =' A @' G<;G< BA6' EA;=N 9 ;' C<' 6 I<' 9' #G B ; ' 1 @<G< @< F<' A @' A 1 A6' C .)' 1=' 1 . G6A <@' 1 ' C<' C<A; =' 9' A66' G< G6<=' ;' C< . ' A=' 9 ;' 1 @1I1@BA6=' 61D<; ' A @' C B;' A;<' C<' . = ' G;<F1 B=' G ==<==1 =N' A @' EC< ' A' A 1 ' CB . 161A <@' ;' < =6AI<@' =1? =' A' G<AF<' ;' AFF<G =' A' ;BF<' 1 ' @ <=' DB ' A@K B; ''_C<' @A ' 9' 1 =' I< ?<A F<

1FC<61<B' D ' C<' < 61?C < <@' G; <F 1 ' EC1FC' C<' A96 ;@<@ ' 61 <;A B;<Y' C<' A; =' 1 @B= ; ' A @' F . . <;F<' F ;1DB <@' . BFC' ' C<' < . A F1GA 1 ' Y' 9' C<' C1;@' = A <' A @' ' C<' G; ?;<==' . A@<' D ' C<' DB6>' 9' C<' F1 1M< =' 1 ' 1 . G ; A F<' A @' F =1@<;A 1 ' 6116= ' E1 C' <' CA @' C<' CB . 161A <@' C<' G; B@' E1 C' C<' C<;' C<' <6<IA <@' G<;= A6' . <;1 ' <I<' ' EC< ' 1 ' <P1= <@' 1 ' C<' . = ' CB . D6<' ;A >=' ' 1=' ' C1=' AFF B ' CA ' C1=' . < . ; ' 1=' KB= 6 ' C B;<@' A @' CA ' 1 ' 1=' <=G<F1A66 ' @<A;' ' A' =FC 6' EC1FC' CA=' ' 9 < ' F 9 B @<@' 61D<; ' E1 C' <JBA61 ' C1=' =FC 6' CA=' ?1I< ' C1 . ' B 0 D B @<@' G;A1=<' 9 ;' CA I1 ?' <= AD61=C<@' C<' A6' G E<;' ' C<' ;B1 =' 9' 9<B@A61= . N DB ' 1 ' 9AF ' B1=' : ' D<9 ;<' 1FC<61<B' CA@' CB . D6<@' C<' CAB?C ' A;1= F;AF ' A @' A . ?=' C<' =BFF<== ;=' 9' CA ' . A;FC' A66' C =<' EC ' > <E' C E' ' ;<1? ' E<;<' AD= 6B <' >1 ?=' < ; ' ' C1 . =<69' 9; . ' C<' @A ' CA ' C<' EA=' ;<F ? 1=<@' A=' >1 ?' AF> E6<@?<@' ' 61 . 1 =' ' C1=' AB C ;1 N A @' 19' B1=' : ' CA@' G ==<==<@' A' = B6' 9' A ' 91; . <==' C<' . 1?C ' CA I<' ;<1? <@' A=' AD= 6B <6 N DB ' 1 ' EA=' =<< ' CA ' C<' EA=' >1 ?' 6 ' 1 ' A . <' A @' CA ' 1FC<61<B' ;<1? <@' 9 ;' C1 . ' ' EA=' A?A1 =' C<' 1 1= <;' CA ' C<' ?;<A <;' B . D<;' 9' C<' F =G1;A ;=' @1;<F <@' C<1;' . AFC1 A 1 =&

/ 8 " ' 0 ! ' : !>' ' 8 * -' (

E1 C' C<' 1 < 1 ' 9' CB;61 ?' C1 . ' 9; .' G E<;' A @' =BFF<<@1 ?' C1 . ' C< ' @1@' ' A AF>' C<' C; <@' DB ' @1=GB <@@' = ' ' =G<A>@' E1 C' 1FC<61<B' C<' G ==<==1 ' 9' C<' ;<?< F 'B @<;' A'>1 ?' EC .' C< '> <E' ' D<' ' 9<<D6<' A @' 1 FAGAD6<' ' D<' <I<;' AD6<' ' <=FAG<' 9; .' A' = A <' 9' GBG16A?<' 1FC<61<B@' C<;<' FA ' D<' ' @ BD @' 1 961F <@' BG ' C<' 9AF 1 =' <;;1D6<' D6 E=@' A @' @<G;1I<@' C< .' 9 ;' A' 1 .<' 9' C<' .<A =' 9' =BFF<<@1 ?' 1 ' C<1;' G; K<F =N DB ' D ' A>1 ?" AEA ' 9; . ' C< .' A6= ' A66' FCA F<' 9' GA;@ @' C<' @; I<' C< .' 1 '<P ;< .<' A @' @<=G<;A <' < <;0 G;1=<=' <' CA@' ' = ;B??6<' A?A1 =' ;<I 6 =' A66' C1=' 619<@' A @' C1=' @<A C' EA=' 9 66 E<@' D ' ; BD6<=' A=' ?;<A ' A=' C =<' EC1FC' CA@' G;<F<@<@' C1=' . 1 1= ;

'EA=' ' 1FC<61<B@' C<;<9 ;<@' EC ' 9 ; 191<@' C<' A6' AB C ;1 '1 'A' @B;AD6<' . A <;N A @' 1 'EA=' 'C<' EC '9 ;F<@' C<' G;1 F<=' A @' CAB?C ' D6<=' ' D E' D<9 ;<' C<' . AK<= ' 9' C<' C; <@' EC <I<;' . 1?C ' D<' 1 =' FFBGA ' C1=' < @' F B6@' 'D<' A A1 <@' DB 'D ' C<' F . D1 <@' 1 96B< F<' 9' A' ?;<A ' ;< #I ' A @' 6 ?' CAD1 @' A @' ' A A1 ' 1 ' C1 ?' 6<==' EA=' ;<JB1;<@' CA ' C<' 1 . G =1 ?' FCA;AF <;' 9' B1=' : ' A @' C<' 6 ?' @B;A0 1 ' 9'C1=' ;<1? ' A;;1<@' AEA 'D 'C1=' GA==1 ' 9 ;' G E<;@' 9 ;' C<' B 1 ' 9' ;A F<@' A @' 9 ;' . A? 191F< F<@' 1FC<61<B' I<;= <GG<@' A66' C =<' 61 . 1 =' _E1 C1 'E611FC' C<' AF 1 ' 9' A' 0 I<; . < ' =C B6@' D<' ;<= ;A1 <@' 9' 1 '1=' 9'1 . G ; A F<@' ' C<' <' CA @@' CA ' C<' F< ;A6' G E<;' =C B6@' D<' = ; ?' A @' 9AF 1 =' ;<G;<==<@@' 1 '1=' ' C<' 6<==' <F<==A; @' ' C<' C<;' CA @@' 9 ;' CG' G;<=<;IA 1 ' 9'I1? B;'1 ' C<' = F1A6' D @ @' 61A ' C<' 619<' =C B6@' F1;FB6A <'Y 9;<<6 'A @@'ADB @A 6 ' C; B?C' A66' 1 =' . < . D<;=' 1FC<61<B' <?6<F <@' C1=' G;1 F1G6<@' A @' F ;1DB <@' . ;<' CA 'A ' <' '1 ; @BF<' 1 ' ;A F<' CA ' <;;1D6<' F< ;A61MA 1 @' EC1FC@' EC< ' 1 ' <PF<==@' CA=' D<< 'A'?;<A ' G<;16' 9 ;' . A 'G< G6<=' ' C<' 1 < ' 1=' G 61 1FA6' <= A . < ' 1=' C<' F @<' 9' @<=G 1= . ' ('F;B=C1 ?' D< <A C' A' @<=G 1F' G E<;' C<' . B 1F1GA6' 9;A 0 FC1=<=' 9' C<' F1 1<=@' A @' I1 6A 1 ?' C<' ;1?C =' 9' C<' G; I1 F<=' A <P<@' ' C<' ; E @' 1FC<61<B' I<; C;<E' C =<' =A6B A;' D B @A;1<=' EC1FC@' #I1=<6 . A1 A1 <@@' E B6@' CAI<' G;<I< <@' C<' A6' AB C ;1 ' 9; .' ADB=1 ?' 1 ='G;<; ?A 1I<' <'1 '61><' . A <;' ;A . G6<@' B @<;' 9 ' C<' AB C ;1 ' 9' C<' +A;61A . < =@' A @@' ' =<FB;<' C<' G<AF<' 9' C<' >1 ?@ . @' 61A@' ;<F B;=<' 6 ' ' A; . =' A @' GB 1=C . < =' <' CB=@6AD B;<@' . BFC' . ;<' 9 ;' C<' G;<=< ' CA @' C<' 9B B;<N A @' C<' ; BD6<=' EC1FC' < =A ?B1 <@' ;A F<' @B;1 ?' A6 . =' C<' IC 6<' 9'C1=' 1 1= ; @' A @' . ;<' <=G<F1A66 ' C =<' EC1FC' DB;='9 ; C' =' I1 6< 6 'A9 <;' C1=' @<A C@' G; I<' CA ' '><<G'A' A 1 'E1 C1

C< D B @= 9 @1=F1G61 <& <; ; ;1= A6 < =B991F1< N CA 9 ;F< FB D< A =BD= 1 B < 9 ;E1=< 1 = 1 B 1 =& C< G; <F 1 9 AF BA6 ;1?C =& A @ 6<?1 1 . A < 1 <;<= = CA & 1 =C ; & >1 ?=& A= C< ;B6<;= 9 < . G1PY<=& FA =FA;F<6 < I<;9 1 . @& D C< A1@ 9 = 6@1<;= A @ <P<FB 1 <;=& A ;@<; 9 C1 ?= EC1FC& PI166 ;< . A1 1 <P1= < F< A9 <; C< . & EC< C< CAI< <?6<F <@ 6<A@ A66 ;<=G<F C< 6AE= D ;<=G<F 1 ? C< . C< . =<6I<=

WA= A @ C< =G1;1 9 91 <== CA@ & = <A;6 A= C< ;<1? 9 B1= : & ;<?B6A <@ C< @1= 1 F A ;1DB <= 9 <AFC G; 9<==1 C< GA;61A . < & @<G;1I<@ 9 1 = A B;A6 9B F 1 =& @<F1@<@ . A <;= 9 =F1< F< A @ EA; * & 1 GA==<@ A @<F;<< 9 @<A C A?A1 = C =< EC =C B6@ <AFC A C1 ? F ;A; C< @ F ;1 <= 9 ;1= 6<N A @ A A 6A <;G<;1 @ 1 @<F1@<@ C< . <A = EC1FC =C B6@ D< A>< 9 ;C< @<9< F< 9 C< FAG1 A6 A?A1 = C< < < . C< =A . < 1 . <& FA;@1 A6= E<;< =<< 1 C< F . . A @ 9A; . 1<=& A @ A . DA==A@ ;= E<;< 9G1 . @ =<; I1 ? 1 C< 91<6@ B @<; C< 9;1< @6 G E<;= EC =< F B; = C< CA@ D<< =<

C< A 1 = 166 ?AI< 1 =<69 BG A C1= G<;1 @ C< . = @<G6 ;AD6< =BG<;= 1 1 = 1FC<61<B CA@ F @< . A 1 9 @<A C GA==<@ BG ;DA1 O;A @1<;& B;W 9 B@1 . & <1= A . A?1F1A N A @ C< E19< 9 A;=CA6 @3 F;< CA@& DB A =61 ; 1 . < G;<I1 B=6 & =B99<;<@ C< =A . < 9A < O;<A 1 . G ; A F< EA= A6EA = A=F;1D<@ A= ; 6 ?1FA6 G;<@1FO 1 =N A @ A C< . . < 9 C< D1; C 9 B1= : & A?$@+?@ A @ C< A= ; 6 ?<; EA= G = <@ 1 C< FCA . D<; 9 < 9 B= ;1A EA FC C< C<AI< = C< C<;CA @& 1 <I<; GA; 9 B; G<& . @< . ?< 1B= EA= . A>1 ? I1? ; B= 961?C = 1 C< =F1< F<=& 61 <;A B;<& A @ C< A; = CA><=G<A;< A @ (AF CA@ ;< @<;<@ ?6A @ 166B= ;1 B= 1 C1= ;<=G<F N A @ H C< CA@ A= F < . G ;A;1<= 1 GA1 & 1FC<6 <; IA <=& G< @< W?A& C< C1= ;1A = A;1A A A @ <; ;<;AN 1 A6 & C< G < = A;1 1& A== 1& A @ C< 1 . . ; A6 A== & C< 611= ;1A %AP@6A& A @ C< 6<A; <@ GC =1F1= = OA616< A @ ; ;1F<661N 1 66A @& C< ?;<A GC16 = K6C<; O ; 1B=N 1 %< . A;>& C< A= ; . <; FC (;ACW& EC =< GBG16 EA= -<G6<; C< ?;<A GA1 <;= BD< =& A @ >< & A @ < 1<;= E<;< A C1= 1 . < C< ?6 ; 9 C< 6< . 1=C =FC 6N EC16= OB1@ & 6DA & A 91 A F& A @ % . < 1FC1 A@@<@" 6B= ;< C< A61A ;< FC . A <;= A= < CA69 DA;DA; B=& CA@ <=G<F1A6 <<@ 9 C< = 9 < 1 ? 1 96B< F< 9 A; A @ 61 <;A B;< C< F 1 . ; CA@ A6;<A@ G; @BF<@

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%<=FA; <=ﾒ EC ' D; B?C ' AD B ' A' ;<I 6B 1 ' 1 ' GC16 = GC ' A @ﾟ =F1< F<ﾟ D ' 9 66 E1 ?ﾟ C<ﾟ <PG<;1 . < A6ﾟ . < C @ﾟ 1 ; @BF<@ﾟ D ' (AF ' A @ﾟ OA616< ' A6C<;D<ﾟ A @ﾟ ; Bﾒ A6= ﾒ CA@ﾟ AFJB1;<@ﾟ A' E<66 @<=<; I<@ﾟ ?6 ; ﾒ C<ﾟ <ﾟ A=ﾟ C<ﾟ G;<FB;= ;' 9ﾟ C<ﾟ ?;<A ' ; <166<ﾟ 1 ' ;A?<@ ﾒ A @ﾟ 61<ﾟ C<;' A=ﾟ C<ﾟ I<;1 AD6<ﾟ F;<A ;' 9ﾟ B;' G < 1FA6ﾟ 6A ?BA?<' ' ' 6< ? Cﾟ ; <166<ﾟ AGG<A;<@ﾒ A @ﾟ E1 Cﾟ C1 . ' F . . < F<@ﾟ C<ﾟ ?;<A ' 61 <;A; ' A?<ﾟ 9ﾟ ;A F<

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' ;<1?C' 9' B1=' : ' . A ' D<' @1I1@<@' 1 ' C;<<' G;1 F1GA6' G<;1 @='N' C<' 91;= ' F . G;1=1 ?' C<' 1 . <' EC1FC' <6AG=<@' D< E<< ' C<' AFF<==1 ' 9' C<' - 1 ?' A @' C<' @<A C' 9' A;@1 A6' AMA;1 &' @B;1 ?' EC1FC' C<' B ?' - 1 ?' >' ' @1;<F ' GA; ' 1 ' C<' 0 I<; . < N' C<' =<F @&' < . D;AF1 ?' C<' . = ' ?6 ;1 B=' <A;=' 9' C1=' ;<1? K' 9; .' ** ' ' * 7'N C<' C1;@&' F . 0 . < F1 ?' 1IC<C' ?;<A ' 9AB6 =' C;<A < <@' @A ?<;' ' C<' G; =G<;1 ' 9' C<' >1 ?@ .' A @' C<' ?6 1}' 9' 1 =' = I<;<1? &' A @' <P < @1 ?' 9; .' C<' @<A C' 9' 6D<; ' ' CA ' 9' B1=' :

<' 9' B= ;1A&' C<';<?< &'AGG 1 <@' C<' %B><' 9' (<AB9 ; &'=<F @' = 9' C<' %B><' 9' < @V . <&' A @' ?;A @= ' 9' < ; ' &' ? I<; ;' 9' C<; E ' FC16@;< &Y' A @' =<6<F <@' A=' C<;' 1 1= <;' B?B= 1 ' + 1<;&' (1=C G' 9 '_(<ABIA1=&' A' . A ' 9' = . A66' A6< =&' A @' A66 ' B AFJBA1 <@' E1 C' GBD61F A99A1;= ' C<' C< ''_AGG61<@' ' C<' +A;61A . < ' ' @1== 6I<' C<' B F16' 9 <?< F ' O61 <;1 ?' G; . 1=<=' ?A1 <@' I<;' C<' 9 66 E<;=' 9 1FC<61<B&' A=' E<66' A=' C<1';' A@I<;=A;1<=' N A @' A ' A' (<@' &' @C' B3' DA<$?@ M@' >7#$> ; @+<' 7@?B +$A@A' ++@ SB= 1F<&' C<6@' ' C<' C' A ' D ' C<' 1 . ?' - 1 ?&' EC ' B3' DA<7$>' >A EA=' C<' ' 91I<' <A;=' 9' A?<&' C<' LB<< ' EA=' ;<F ? . =<@' A= @ B+<' □ □ <?< &' A @' AF> E6<@?<@' ' D<' A ' 61D<; ' ' F . G =<' C<;' F B F16' A=' =C< FC =<' C1=' EA=' C<' =<F @' 1 . <' CA ' C<' +A;61A . < ' CA@' D<< ' FA66<@

I' M@' @>7#K' @CD?><$B+' B3' <M@' KBD+ ' 7$+?@' S>A' ; D?M' +@ #@?<@C ' @' M$; A@#3' 7@#><@C' <M><' SM@+' >' ?M$#C ' M@' 3@## $+<B' >' J>A$+' $+' <M@' >#>$A' BK>#' S$<MBD<' >+K' B+@' M>G$+ ' +B<$?@C' $< ' @' S>A' B3<@+' S$<MBD<' ?B ; ; B+' +@?@AA>7$@A ' >+C' <M@' L> @A' B3' M$A' ?M> ; J@7' S@7@' C$A ; $AA@C' J@?>DA@' <M@7@' S@7@' +B' ; @>+A' B3' ADLLB7<$+ ' <M@ ; ' D7$+ ' <M@' <7BDJ#@A' B3' <M@' 7B+C@' <M@' @ @+<' C@L7$G@C' <M@' DQ@' B3' @+C\ ; @' B3' M$A' L#>?@' >A' ! BG@7+B7' >+C' >G@' $<' <B') >7AM>#' $##@7B$' M@' #><<@7' ; >C@' <M@' ?#@G@7' JJH' H7H3$N@' C@' @>D ; B+<' <M@' KBD+ ' $+ (A' L7@?@L<B7]' JD<' ?$G$#' S>7A' >7@' +B<' ?B+CD?$G@' <B' <M@' L7B 7@AA' B3' @CD?><$B+' >+C' <M@' 7BK>#' LDL$#' #@>7+@C' #$<<#@' ; B7@' <M>+' K ; +>A<$?' @NB7?$A@A' $+' SM$?M' M@' ?N?@##BC' P' @' S>A' C@#$ M<@C' MBS@G@7 O' A>KA' B#<>$7@' P' S$<M' G@7A@A' >+C' $0B ; >+?@A' <7@><$+ ' B3' >##>+<7K' >+C' #B7K' SM$?M' S$<MBD<' M$A' Q+BS$+ ' $<' LB7<7>K@C' M$A' ?M>7>?<@7 0

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G ; A FAG B;< 9 C1 I166< EA= C< 91;= 9;B1 9 C1= I1F ; A @ EA= JB1F>6^;9 66 E<@ D C< @<A C 9 A;=CA6 @< OBWD;1A A @ C< @<9<A 9 C< B @< A MAB C1= =BFF<== ; EC EA= IA JB1=C<@ A %B 61 ?< D C< %B>< 9 ; ;A1 < A @ C< E 166B= ;1 B= ?< <;A6= S C @< <; C A @ <;F C<;< E ;< . A1 <@ DB 91I< ; =1P C B=A @ . < 9 A ; . EC1FC CA@ 6 ? . A@< C< . G1;< ;< . D6< A @ A;=CA6 B;< < EA= =< ;A66 ECA ;< . A1 <@ 9 1

(;1661A =BFF<==<= A <@ 9 ; C1= ;<I<;=<N A @ 1 C< 91;= G6AF< %3 ?C1< E1 C B;< < B @<; C1= ;@<;= IA JB1=C<@ <;F A ;1D B;? C< +;1 F< <PF1 < C< F B;A?< 9 D B;?A @ ;@ C1= 6@1<; = 1 C1= ?;<A DA 6< C;<E @= DA 9 F . . A @ 1 C< < . 3= < ;< FC . < = A @ ;<F I<;<@ 1 =E ;@ 1 CA @ C< 9 66 E1 ? <A;' C< . A;FC<@ C< A==1= A F< 9 B;< < EC CA@ D<< =B;G;1=<@ A @ D<A < A ; A;1< @A6 A @ ?A1 <@ C< DA 6< 9 ;@61 ?< C< @<A C 9 <;F @<F1@1 ? C< I1F ; C< ?;<A A6< 9 @W F =1= <@1 9 ; . 1 ? C<1 = A C< D 6@<= ;<= 6B 1 = A @ <P<FB 1 ? C< . E1 C G;B@< F< A @ ;AG1@1 C< %B>< 9 ;6<A = C< - 1 ?3= B F6< A @ C< B @3 A;F B; CA@ A6= FA; ;1<@ C< EA;' E1 C 9A1;' =BFF<==< 61< <1 6A @<;= 61< C<;'1 A A6 1A C< 91;= A1@<@ D A;=CA6 @< OA==1 CA@ =<1M<@ O;AI<61 <= A @ B; ;A A @ A>< A;@1F> 1 C< G;<=< F< 9 A ' < < . 3= A; . C< =<A A6= C< ;< FC A; . = CA@ D<< =BFF<==9B6 E< 9 C<1;' ?A66< = CA@ IA JB1=C<@ 1 * * C< GA 1=C 96<< C< F A= 9 A6 A @ 1 C< =A . < <A;' C< %B>< @3 ?C1< A==1= <@ D C< F<6<D;A <@ A ; . G C< %B FC A@ . 1;A6 ?AI< %B >1;> ;A F< < C< =< A16 9 ;' GA1 EC<;< C< . < E1 C A' ;<GB6=< D<9 ;< W;1@A C< =1<?< 9 EC1FC C< EA= 9 ;F<@ ;A1=< AG6<= ; =<1 1 =B; ;<F 1 A C< I 1F< 9 C< 91=C<; . A A=A 1< N B @<; A @ C< %B>< 9 OB1=< =B; ; B @<@ D C< <AG 61 A = C;<E C1 . =<69 1 1 (B ;A F< 9A16<@ =1JbG ; C1 . N C< EA= . A@< G;1= <;' D % S C 9 B= ;1A C< A B;A6 = 9 +C161G A @ AG6<= 9<66 A?A1 D< <A C C< GA 1=C >< ''

C< <A;= * 2 A @ * E<;< 9A A6 C< B=< 9 B= ;1A B;< < E1 C C< A==1= A F< 9 C< E<@<= ?A1 <@ C< DA 6< 9 . & . B3 @+A . <;CAB=< N O< <;A6 ;A ?<6 > 1 6< +;A?B< N A @ C< DA 6< 9 61< = <; . 1 A <@ C< EA; C1= DA 6< EA= 9 B?C D C< %B><@3 ?C1< C E +;1 F< 9 V @W 1 * A?A1 = CW ;FC@B>W < G 6@ C< . G<; ;3= D; C<; = C< A@IA F<@ EA;@= C< < < . C< B <;<@ 6

AD$+ ' >< >L#@A
) BA>+$@##B

C<=<' E ;@= , [' 6@1<;=' ;< . < . D<;' F; 1 ;1D B;?A @ ;@61 ?< ' <' ; B <@ C< . G<;1A61= =' A @ C< GA 1A;@= >' A' CB @;<@ 96A?=' A @ 1C1;9 <1?C ' G1<F<=' 9 FA M A @ ?A1 <@ = ' F . G6< < A' I1F ; ' CA ' < G 6@ A=' 6<9 ' E1 C B ' A ' A; . ' (; >< ' @ E ' D ' = ' . A ' ;<I<;=<=< <;@1 A @ ' F =< <@ ' <? 1A < A @ G<AF< EA=' A ' 6< ? C =1? <@ A ' +<AF< 9 B = <;' 1 ' <= GCA61A ' (' C1=' G<AF< 1 ' EA=' A?;<<@ CA FAGDA A ;A F< =C 1@@ ;< A1 ' A' ?;<A ' GA; ' 9 6=AF< 61< C;<< D1=C G ' ;1F=' A @ C< E ' 9 ; ;<==<=' 9 +C161=D B;?' A @ +1? <; 6 C< >< =' 9 O<; . A ' A @ +1<@ . ' C< G;1 F1GA6 A; 1F6<=' 9 C< ;<A ;<6A 1I< ' C< A661<=' 9 ;A F< @<F6A;<@ C< = I<;<1? ' 9 C< IA;1 B=' A <=' 9 O<; . A ' C; B?C B ' C< <P < ' 9 C<1;' <;;1 ; @<91 <@ C<1;' ;1?C =' A ' C<?< <;A6 @1< =' 9 C< . G1;< A @ D<= E<@ BG ' C< A6I1 1= =' C< =A . < G;1I16<?<=' CA ' E<;< G ==<==<@ D ' C< B C<;A =' E<@< ' GD ' ' A1 <@ A' G ; 1 ' 9 + . <;A 1A . A ' = ; ?' G6AF<=A @ 91I< . 1661 =' 9 F; E =' C< E1=='FA =' E<;< @<F6A;<@ 91;<< 9 C< O<; . A 1F . G1;< A @ C< 1 @<G< @< F< 9 C< 1 <@ +; I1 F<=' 1 ' ;<=G<F ' ' C1=' . G1;< A @ ' GA1 ' EA=' 9 ; . A66 ' ;<F ? 1=<@ ' C< +<AF< 9 <= GCA61A' GB ' A ' < @ ' C< C1; ' <A;=3 A;' 1 ' O<; . A N DB ' GA1 ' ;<9B=<@ ' AFF<@< ' 1 AG@ 1;< EA;' F 1 B<@ D< E<< ' CA ' F B ; ' A @ ;A F< ' C< 1 . < EC< ' C< F<6<D;A <@ G<AF< EA=' =1? <@ C< # <;1 ;' 9 @ .1 1= ;A1 ' >1 ?@ .' EA=' . BFC' @1= B;D<@ C6AMA;1 CAI1 ?' D< ' 9 AM=;1 ' F . < A66' G E<;9B6 CA@ ; B=<@ A?A1 = ' C1 . =<69' A ' A6 . = ' 1 . 1I<;=A6' CA ;<@ A @ 1 @1? A 1 ' ' C< FCA;AF <;' 9 C1=' 1 1= <;' . BFC' 1 @ 6< F< A @ 91;1I 61 ' E<;<K 1 <@ E1 C' @1= 1 ?B1=C<@ A6< = ' 1@1FB6 B=' D 'C1=' AFF< ' A @ C1=' . A <;= A @ @1 B=' A=' A' = ;A ?<; C< EA=' C< DK<F ' 9 B . <; B=' FADA6=' < E1=C<@ 1 ' F . . ' E1 C' 1FC<61<B CA ' C< A6 ' G E<;' =C B6@ D< AD= 6B < A @ C1=' @<=G 1= . ' <PF1 <@ A=' . BFC' CA ;<@ A=' @1@ CA ' 9 C1=' G;<@<F<== ;' (B ' EC16= ' 1FC<61<B' D ' C1=' F;B<6 1<=' 9166<@ A66' E1 C' <;; ;' A @ 91;1?C < <@ . A ' 1 ' D<@1< F< AMA;1 ' C< F ;A; C ' C1=' G<;G< BA6 9A6=<C @= A @ C1=' ; B B=' G 61F A@@<@ F 0 < . G ' ' C< CA ;<@' EC1FC' A6;<A@ ' 9166<@ C< C<A; =' 9 C1=' < < . 1<= A @ < . D 6@< <@ C< . ' ' A AF>' C1 . ' C< ;<?< ' EA=' G< 6 ' AFFB=<@ 9 CAI1 ?' ?1I < ' 16' C<;' F 91@< F< ' A ' A61A ' EC ' EA=' AFJBA1 <@ <1 C<;' E1 C' C< ?< 1B=' ;' C< 6AE=' 9 C< F B ; AG@ CA@ F . G =<@ C<;' F B F16' 6<==' 1 ' AFF ;@A F< E1 C' C< <F<==1 1<=' 9 C< A < CA ' E1 C' C< E1=C<=' 9 C<;' 1 1= <;' ' 1< 1= +A; 1F<661' . <;1 A' F < . G 1D6< 9<66 E ' EC ; ' AMA;1 ' CA@ F 91@<@ C< . A A?< . < ' 9 C< 91 A F<=

@1=?B= <@' C<' ;< FC' D ' C1=' 6BPB; &' C1=' @<DABFC<;1<=&' A @' C1=' CA <9B6' ;<= B;F<=' <' F;<A <@' ;1@1FB6 B=' 991F<=&' QEC1FC' C<' GB ' BG' ' ABF 1 'N C<' ;A1=<@' C<' A;199' 9' C<' ;1?C =' 9' < ;A F<&' A @' <PCB . <@' A ' <@1F ' 9' 7 ' EC1FC' G; C1D1 <@' ' C<' <P < =1 ' 9' +A;1=&' A @' EC1FC' GB 1=C<@' 1 =' 1 9;AF ;=' E1 C' C<' @<= ;BF 1 ' 9' C<' DB16@1 ?=' <;<F <@' E1 C1 ' C<' @<91 <@' 61 . 1 =&' A @' C<' F 91=FA 1 ' 9' C<' . A <;1A6=' A 'G<;= =' EC ' CA@' @1= D< <@' C1=' <@1F &' 6 ?' =1 F<' 9 ;? < &' CA@' E' 'GA 'C<AI '=B . =' '=AI<' C<1;' G; G<; ' C<' G<;A 1 ' ;@<;<@' 1 ';<=G<F ' ' C1=' . A <;' D ' C<' O I<; . < 'EA=' FA66<@' C<' 'a ;< FC' . <A=B;<' 9' A' 9A C . b&' A @' <PF1 <@' ?;<A '1 @1? A 1 ' C<' +A;61A . < 'EA=' 1 9 ; . <@' 9' 1 &' A @' C<' <@1F 'EA=' E1 C@;AE

'A@@1 1 ' 'A66' C1=' AMA;1 ' @<=1;<@' '><<G' DAF>' 9 B;' <A;=3 =A6A;1<=' 9; .' C<' . < . D<;=' 9' A66' C<' = I<;<1? ' F B; =&' E1 C' C<' <PF<G 1 ' 9' C<' +A;61A . < ' 9'+A;1=&' A @' C<' C;<A < <@' '=BGG;<==' C<'6AE'> E 'D ' C<' A . <' 9' C<' . !' EC1FC' =<F1B;<@' ' C<' 911 . 161<=' 9' . A?1= ;A <=' C<' G ==<==1 ' 9' C<1;' 991F<=' 1 ' G<;G< B1 ' C1=' A;D1 ;A; ' G; F<<@1 ?' A; B=<@' A' B 1I<;=A6' F6A . 1B)N' A @' C<' O;A @' B F16&' C<' B;' 9' FF B =&' A @' C<' . ' 9' 1@=&' G 1 <@' B ' ' C<' +A;61A . < &' CA ' C<' @<F1=1 ' EC1FC' <PF<G <@' 1 '9; .' C<' G<;A 1 ' 9' C1=' . <A=B;<' CA@' D<< ' 6 ' A>< '9 ;' C<' GB;G =<' 9'@1=B 1 1 ?' C< . ' C<' +A;61A . < 'A==< . D6<@' A @' GA==<@' C<' F<6<D;A <@' @1F ' 9' 1 &' 1 'AFF ;@A F<' E1 C' EC1FC' #I ' F B F166 ;=' FC =< ' 9; .' <AFC' 9' 1 =' FCA . D<;=' >+C' $; RS7<>+<' E<;<' 'F 9<;' E1 C' @<GB 1<=' 9; .' C<' C<;' D @1<=' 1 ' C<' ?M> ; J@7B3 <' "BD$AI F . . ' 1 <;<=' 9' A66' AMA;1 ' @<F6A;<@' 61A ' =BFC' A' @<F;<<' EA=' A ' A AF>' B' C<' ;1?C =' 9' C<' ; 1;A&Y' A @' <' 9' B= ;1A' E1=C<@' '1 961F ' 1 . . <@1A <' GB 1=C . < ' ' A66' C =<' EC ' CA@' =1? <@' 1 ' C1=' LB<< &' =A1@' AMA;1 &' EA=' A=' D;AI<' A=' A' = 6@1<;&' EC ' > E=' ' C<' ;<A61 ' 9' C<' @A ?<;&' A @' C<' E1 C' @1991FB6 ' ;<= ;A1 <@' C<;' E;A C' C<' +A111A . < K' EC =<' M<A6' EA=' = 1 . B6A <@' D ' C<' B ?' . A?1= ;A <=' 9' = > !' @<I <@' A66' 1 =' 1 . <' ' C<' A99A1;=' 9' @1<' A <&' A @' F F161A <@' GBD61F' 9AI B;' D ' FA661 ?' 9 ;' C<' @B<' <P<FB 1 ' 9' C<' 6AE=' A @' A@ G 1 ?' . A 'G GB6A;' ;<= 6B 1 =' C<' CA . D<;' 9' ' B1=' I <@' E< =<I< ' A; 1F6<=&' EC1FC' E<;<' 'D<' =BD . 1 <@' 9 ;' C<' AGG; DA 1 ' 7' C<' +A;61A . < ' A @' C<' =A F 1 ' 9' C<' ;<?< ' ' . A ' 9' C<' A; 1F6<=' C<' . A?1= ;A <=' =C E<@' C<1;' K<A6 B= ' 9' C<' 91 A F1<;=&' A @' C<1;'1? ;A F<' 9'GBD61F' A99A1;=' A @' A ' C<' G;1 F1G6<=' 9' F;<@1 'N DB ' C<' G;1 F1GA6' <=' E<;<' @<I <@' ' B=<9B6' ;<9 ; . =' ;' E1=<' . <A=B;<=' . <' =<FB;<@' ' G;1IA <' G<;= =' C<

0 ' $ ' - 8 ! ' : ! ' ' 8* -'

GA . < ' 9' C<1;'D @=' ' C<' V <6 @< 166<&'; <61<I<@'F . . <;F<' 9' @1 B=' . G 61<=&'A @'; <@BF<@'D ' < 9 B; C' C<' @1 B=' AP' 9' C<' !'EC1FC' 6 '9<66' ' C<' CB . D6<;' F6A==<=' C<;' A; 1F6<=' G; C1D1 <@&' ' GA1 ' 9' @<A C&' C<' 6<I 1 ?' 9' A ' AP' =AI<' D ' I<;191<@'5<@1F =''=A F 1 <@' D ' C<' = I<;<1? ' F B; =N' A @' @<F6A;<@' CA ' <' 9' C<' - 1 ?3='=BDK<F =' =C B6@' D<' 1 'FB= @ ' . ;<' CA ' E< 9 B;'C B;='E1 C B ' D<1 ?' 1 <; ; ?A <@' A @& A><' 'D<9 ;<' C1='G; G<;'KB@?<' C<' G; G =1 1 =' 9' C<' CA . D<;' 9' A1 ' B1='E<;<' G;AF 1FA66 ' C<' DA=<=' 9'A' A 1 A6'F = 1 B 1 &'A @' C<' F1 1M< ' F6A==<=';<F<1I<@' C< . 'E1 C'< CB=1A= . ' C<' G< G6<'=AE'1 =' E 'FAB=<'1 ' CA ' 9' C<' . A?1= ;A <=' EC 'CA@'A@ G <@' C< . &'A @' C<' +A;61A . < '@<61D<0 ;A <@'BG ' C< . &'1 ''=G1 <' 9' C<' G; C1D1 1 ' 9' C<' ;<?< &'EC 'FA66<@' C<=<' A; 1F6<=' = ' . A ' A < . G =' A ' A==A==1 A 1 ' 9' C<' A6'AB C ;1 ' C<' B; &' C<' A; . &'A @' C<' . B6 1 B@<' E<;<' E' @1I1@<@' 1 ' E 911F 1 =& CA ' 9' C<' AMA91 ='A @' CA ' 9' C<' ; @< . ;=&Y' ;'GA; 1=A =' A @' C<' ;A ' 9' C<' +A;61A . < ' C<' 91;= ' G;<=1@< & A C1<B' 6W&' A CBB7A'□ . A ' 9' C1?C' FCA;AF <;&1 <;G =<@' 1 'IA1 'D< E<< ' C<' E ' GA; 1<='N C1=' . @<;A 1 ' A @' 6 I<' 9' G<AF<' 6 ' D; B?C ' BG ' C1 . ' C<' 1 =B6 =' 9'A66 ' . ?= ' C ='EC 'E<;<' C<' . = '<A?<;'1 'B;?1 ?'9 ;EA;@' C<' . A?1= ;A <=&'E<;<' C<' . < . D<;=' 9' C<'A F1< ' ADA6' 9' C<' . G ; A =&' C<' <P - <<G<;' 9' C<' <A6&' CA <A1 . <B9&'E1 C' K;W= ;' A @' GA1 DA6&' EC ' CA@' D C' 9 ; . <;6 ' 99<;<@' 'A==A==1 A <' 1FC<61<B'N CAI1? &'EC ' EA=' C<' AB C ;' 9' C<' 9AI B;' AMA;1 ' E'< K <@&'A @' EC 'CA@' D<< ' @1=?;AF<@' D 'C1 . 'N ;A166<=&'A @&'AD I<'A66&' C<' 9A . B=' +AB6' @<' 0 @1&' F A@KB ;' 9' C<' ;FCD1=C G' 9' +A;1=&'A @' A ' A' 6A <;' G<;1 @' > E ' D ' C<' A . <' 9' A;@1 A6' @<' < M&' A ' AD6<' . A & G ==<==<@' 9' A' KB=' A @' G; 9 B @'1 <66<F &'A @' EC ' EA=' <=G<F1A66 'A . D1 1 B=' 9'D<1 ?' A ' C<' C<A@' R 9'A' GA; ' 1=' . A? 191F< 'FCA;1 1<='CA@' 6 ?'D<9 ;<'?A1 <@'C1 . ' 61<' C<A; ' 9' C<' G< G6<'N A ' C<' F . . < F< . < ' *9' C<' G 61 1FA6' @1= B;DA F<=' C<' CA@' 99<;<@' C1='=BGG ; ' ' C<' <?< &'EC ' CA@' C<' 1 . G;B@< F<' '@<=G1=<' 1 &' A @' C<' 1 . . <@1A <6 ' GA==<@' I<;' ' C<' +A;61A . < A; ' =1@< <' 9' B= ;1A&'@< <; . 1 <@' C B?C' =C<' EA=' ';<G<6' <I<; 'A AF>' ' C<' AD= 6B <' G E<;' 9' C<' ; E &';<= ;A1 <@' C< =<69' A ' G;<=< & AEA1 1 ?' E1 C' F F< ;A <@' E;A C' 9 ;'A'9AI B;AD6<' GG ; B 1 'N A @' C<' +A;61A . <

Y' C<' . A?1= ;A <=' GG =<@' ' C<' B; 'E<;<&'A ' C<' F . . < F< . < ' 9' C<' ; BD6<=& F . GA;<@' ' C<' =FC 6D =' EC '9 B?C'<AFC' C<;' E1 C' =61 ?='1 ' C<' . A =' 9' +A;1=& A @' @1=G<;=<@' A=' = ' AC' C<' ='AE' C<' A FC' F .1 ?' C<' E ;@ >' C<' GBD61F' 9A F &'A @';< . A1 <@'11 'B=<&'A6 C B?C'1 =' AGG61FA 1 '= 'F<A=<@' 'D<'KB=

G; F<<@<@ D 6@6 @1=FB= C A; 1F6< @;A#I BG D C CA . D<; 9 A1 B1= EC< <E A; ;1I<@ 9 C F<6<D;A <@ I1F ; 9 @W A < = C LB<< C B?C =C CA@9 B @1 C . 1@= 9 C < CB=1A= . <PF1 <@ D C =BFF<== 9 C A6 A; . =A 9AI B;AD6 . . < 9 ; = ;1>0 1 ? C . <@1 A <@ D6 EA A @ EC16= C EA= D<1 ? =B ?9 ; C1= I1F ; =C<?AI<A I<;DA6 ;@<; C 61<B < A 9C<;?BA;@= =<1M< C C;<< . = 9AF 1 B= . < . D<; = 9 C +A;61A . < C G;<=1@< = CA; A @ (6A F . W 16 A @ C F B F166 ; (; B==<6 C 91;= <=FAG<@ DB C E C<; E<; A; ;<= <@N C 9AF = D<FA . I1@<6 > E A @ C G< G6 ; =< CA1 E<; C; E AF; = C = ;<< = ?A + G DA; ;1FA@< E<; <;<F <@ C FA; ;1A? 9 C A;@1 A6 EA= GB;=B<@A @ = 6@1<; E<; . A==AF;<@A . 1@= F;1< 9 ? @ 2 C +A;61A . < G; F<<@<@1 A D @ C +A6A1= A6 < <;?< 1FA66 ;<G;<=< <@ C LB<< C @A ?<; EC1FC =C1 F . <@A @ =BGG 1' <@D AMA;1B D A1 <@ C 9;<<@ . 9 C E A?1= ;A <= C ;<A 9 <= GCA61A EA= 9 < =1? <@ C ;<A=B1 EA=H < . G A @ C XB) 9 B @1 =<69 E1 C B ;<= B;F< =BGG ; A F< A E'A; AD; A@ A @ A F 961F E1 C1 AMA;1B =AE I<; F6<A;6 CA . @<;A 1 EA= <F<==A; A @ ?B1@<@ D C1= A@I1F< < 9 B= ;1A @1==1 . B6A <@A @ =A F 1 <@ C C F D<; 0 1 A F<6<D;A <@ @<F6A;A 1 C ?;<A <; B . D<; 9 C A; 1F6< 9 C CA . D<; 9 A1 B1= C <=A . <@A G<AF< 4EA= =1? <@ E1 C C . G1;<A B = <; GA1 A6 <;<. A1 <@ A EA; E1 C ;A F< F<; A1 B . D<; 9 ;<?1 . < E<;<1 . . <@1A <6 ;<FA66<@ 9; . 6A @<; C <1; = 9 C<FAG1 A6

F =<JB< F< 9 A JBA; ;<6 E1 C C %B>< 9 ;6<A =A C +;1 F< 9 @W CA@ K 1 <@ C GA; 9 AMA;1 EC . <@< <= <@A F . .< F<.< A @G; . 1=<@ C1 . C1= =BGG ; N A @ < 9 B= ;1A E E3 F1I16S>7', / D<61<I<@C<;=<69 D<AD6< F;B=C C<; < < . 1<= FF . GA 1<@D C A;@1 116 =C<=B@@< 6 JB1 <@ +A;1= 9 ; A1 O<; . A1 =N EC<;<=C<@<0 B F<@ C . A?1= ;A <= 9 C<+A;61A . < A= ?B16 9 A F =G1;AF A?1@ = C A6 AB C ;1 A @ 9 D<1 ? 1 6<A?B< E1 C C < < . 1<= 9 C A <A @ . I<@ ; G= BG C FAG1 A6 C +A;61A . < 1 = =1@<; A1=<@ . < A @ = 6@1<;=A @ GBDC=C<@A @<F;<<E C1FC @<F6A;<@ AMA;1 D< A @1= B;D<; 9 C GBD61F G<AF<A @ ;@<;<@C1 . JB1 C >1 ?@ . E1 C1 <1?C @A = C1= EA= C F . . < F< . < 9 C F1I16 EA;

@W F . . A @<@ C A6 A; . C ?;<A <; B . D<; 9 C G;1 F<=

A?A1 =' C< ; E (C< +A;61A . < ' 9'+A1'1=(. ;< I<;(@1@' ';<G;<=< ' C< A 1 (A=' EA=' C< FA=<' 1 ' ?6A @'N C< =<69 6 I< 9' C< . < . D<;=' A @' C<1;' ' '- '@1@' 'G;<I< ' ~ < . '9; .'G<;F<1I1 ?' CA' C< A <=' 0< <;A6 A6 < G ==<==<@' A' 6<?A6 ;1?C ' ';<?B6A < 1 ' F F<;' E1 C' C< ;<?< ' C<1 . G ; A 'A99A1;=' 9' C< A <(A @' CA' '=BD= 1 B < C< . =<6I<=' 9 ;' C< . (E B6@' D< A' I<; ' D 6@' G; F<<@1 ?' CB=(C< ' @<=1;<@' CA' EC1FC' EA=' 1 . G ==1D6<'N 9 ;' C< ' @<=1;<@' CA' C< - A6 AB C ;1 ' =C B6@' D< F 91 <@' E1 C1 'F<; A1 '61 . 1 =' E1 C B 'D<1 ?' C< . =<6I<=' 91; . 6 ';<= 6I<@' ' CAI< ;<F B;=< ' C =< <P ;< . < . <A= <<=' E1 FC' A6 < F B6@' =<FB;<' C<1;' ;1B . GC' C< 'E<;<'@<= 1 <@(C<;<9 ;<('=BFFB . D'N A @' C<1;' E<A>0 <==' 91 A66 '@<G;1I<@' C< G< G6< 9'A '?BA;A << ;' A '=<FB;1 '9 ;' C<1;' G; G<; ' ;' 61D<; (A @' F ;1DB <@' . BFC' ' C< 6 ?' F 1 BA F< 1' A ' A;D1 ;A; ';W?1 . < 1 ' ;A F<(1 'D<1 ?' A B;A6 'G E<;' F 1 BA66 ' '=E<66 A @' ' I<;= <G' <I<; ' 61 . 1 ' A9 <;' <AFC' 9;B1 6<==' <99 ;' ' ;<= ;A1 ' ;' =BGG;<==' 1

C< A6 . =' A6 AD=< F< 9' A '@<<G' F I1F 1 '1 ' . < 3=' C<A; =' @B;1 ?' C< ; BD6<=' 9' C< ; @<(?;A@BA66 '1 96B< F<@' C< F @BF' 9' C< E 'GA; 1<=' N C< 9;1I 61 ' 9' C< . 1I<=' EC1FC' 1 @BF<@' C< ?;<A <;' B . D<;' 9' C< 6<A@<;=' A>< BG' A; .=(' 9;<JB< 6 ' D< ;A <@' 1 =<69' 1 ' A' = ;A ?< 61?C <==' 9' 6A ?BA?<(EC1FC' C< . B6 1 B@< 1 . 1 A <@' C1=' EA;'@<= 6A <@' C< >1 ?@ . (A @' . A@< F<A =' 9' D6 @' '96 E(A @' < ' C< . =' =<;1 B=' <I< =' E<;< 61< =BDK<F' 9' = ?=(A @' B; <@' 1 ' ;1@1FB6<' C< %B>< 9' (<AB9 ; (EC = ' 9A . 161A;' . A <;=' @<61?C <@' C< G GB6AF<(EA=' =B; A . <@' C< - 1 ?' 9' C< 'A' C< F A@KB ;' 9' +A;1=((1=C G' 9' ;1 C(' @ !' ;A1=<@' A' ;<?1 . < (ICIFC' C< G< G6< FA66<@' C< ;<?1 . < ' 9' ;1 C(A @' EC< ' 1 ' EA=' ; B <@' D ' C< LB<< 3=' ; G=(C< @<9<A 'EA=' FA66<@' C< ['91;=' 9' C< ;1 C1A = `' C< F A@KB ;' FA;;1<@' A'@A??<;' A 'C1=' EA1= ( A @' C1=' EA=' =G >< ' 9'A=' [' B;' ;FCD1=C G3=' D;<I1A; ` C< +A;1=1A =' =A661<@' ?A16 ' 9; .' 61<1;' EA66=(@<F ;A <@' E1 C' =FA;9=' 9; .' C< CA @=' 9' C< %BFC<==<=' 9' ?B<I166< A @' (B166 (A @' A' 9<E' A61=' ; G=' E<;<' =B961F1< ' 'GB' C< .' D' 961?C

'91;=' F . G; . 1=< >' G6AF<(E1 C B' A ' @<F1=1I< ;<=B6' ' C< A@0 IA A?<' 9' C< +A;61A . < ' C< LB<< 'A @' C< A;@1 A6 g9 CAI1 ?' ;< < <;<@' +A;1=(9 B @' C< . =<6I<=' 1 =B6 <@' D' 9;1?C 9B6' 61D<6=' C< '6<9 '1 ' F< . ;<(E1 C' C< B ?' - 1 ?(A @' @< <;0 . 1 <@' ' D6 F>A@< 1 ' A @' ' ;<@BF< 1 ' D ' 9A . 1 <' @W' @1;<F <@' C< . 161 A; ' G<;A 1 =' A?A1 =' +A;1=(A @' AMA;1 '=< ' ' C< +A;61A . < 'A

B - -# EC1FC DA 1=C<@ 1 A;?1= C +A;61A . < ;<G61<@ D A @<F;< EC1FC @<F6A;<@ AMA;1B A < < . C - 1 ? A @ C A <@ A @ A @1= B;D<; G C GBD61F ;<G =<@ A @ ;@<;<@ C1 . JB1 C >1 ?@ . E1 C1 <1?C @A = 6;<A@ @ C E<I<;@ C +A;1=1A = E<;< E<A; G EA; A @ CB ?<;N C F1I16 ; BD6<= G; I<@ A@IA A?< B= C GA 1A;@=@ EC I<;< 1 6<A?B< E1 C C ; @<@ A @ C GA; 1<= . A@< A G<AF< A B<16 +<AF< G (BF16@ A;FC@ * !@ E611FC =A 1=91<@ < C +A;61A . < ;< . A1 <@ A 61D<; A==< . D6<@ A @ C LB<< ;< A1 <@ C<; 1 1= <;

@9<@ G;<=B . 1 ? C1= ?;<A =<; I1F<=@ D<FAG1<Y 1 =BGG ; AD6< C< LB<< AFF B G C1= G;1@< A @ <PA??<;A <@ G;< < =1 = < 1 . G =<@ CA <9B6 D61?A 1 = AMA;1 @ @< . A @1 ? CA C< 1 . G 6A1=@ C1= ;<6A 1 @ O I<; ; G + ; I< F<@ A @ ?B16 G I1 6< A ; F1 1<=@ =C B6@ D< =BGG ; <@ A?A1 = C< +A;61A . < G 1P@ A @ CA C< %B>< G< G; @ EC . C< CA <@@ =C B6@ D< F @< . <@ D CA G (;@<ABP C< +;1 F< ><G A; 1 . @ C1 . A B . D<; G ?< 6< . < A@I< B;<;=@ A ;AF <@ C1 . D C1= C1?C . 161 A; ;<GB A 1 @ A @ =FA;F<6 A;<@ C1@< C1= G; K<F G ;< @<;1 ? C1 . =<69 1 @<G< @< 1 ;A F<@ A @ D C<=< G; F<<@1 ?= A61< A <@ D C C< <?< A @ C<;1= <; C< ; @< . = IA1 6 = B?C A AFC C1 . C< . =<6I<=N C< @<=G1=<@ C< . @ A @ F . . < F<@ A G; F<== A?A1 = C< F A@KB ;@ C<%B>< G (<AB9 ;@ A @ (; B==<6@ EC . C< AFFB=<@ G CAI1 ? A < . G <@ . B;@<; C1 . AMA;1 <99<F <@ A ;<0 F F161A 1 E1 C C< F A@KB ;@ A @ FC =< C< . . < EC< @* CA@ ;< @<;<@ C1 . =<69 A= CA <9B6 C< ; @< A= C1 . =<69 F;B=C C1 . 1 =B6 9; . C1 . C< LB<< @< <; . 1 <@ C<; A>< C< . = ;1? ; B= . <A=B;<= A?A1 = C1 . < C1 . =<69 . F =F1 B=6 =1? <@ A ;@<;6 ;C1= ;;<= G A; ;<= N A @ CAI1 ? D<< < 1F<@ C< +A6A1= A6@ C< + F< @ # C SA BA; @B @<; C<G;< < F< G C<C 6@1 ? 9A F B F16N C< EA= A; ;<= <@ E1 C C1= D; C<; C< +;1 F< G 1@ A @ C1= D; C<; 1 6A C< %B>< G ?B<I166< @< AFC . < G 9 61?C C ;=< F @BF <@ C< . 1 F< <=@S; . EC< F< C< @E<;< ;A =9<;;<@ A;F B==1@ A @ C< F< AI;<

C< %BFC<== G ?B<I166< 96<@ ; . A @ @ C G1 ? A; B=< CA G; I1 F<@ G EC1FC C< %B><&&C<;CB=DA @@ EA= ? I<; ; AMA;1 @ C E0 <I<;@ CA@ A>< G;<FAB 1 A; . <A=B;<=@ A @ CAI1 ? 9A16<@ 1 C1= G; K<F @ =C< G; F<<@<@ < A @ B;< <@ EC . =C< F< . ;< ; B=<@ A?A1 = 1C< B; C1= ?;<A . A @ A661<@ E1 C C< GA 1A;@=@ IA= D<A < A

10 8 ** ^R < *' " ' = = *8

1 'A' = A <' 9' @<9< F<ƒ A @' 1B . 1=C<@' C<' E<;=' 9' C<'FA C<@;A6'E1 C'1 = ;B0 . < =' 9' EA;' ' C<' . A?1= ;A <=' =FA;F<6 ' @A;<@' ' G; F<<@' ' C<' +A;0 61A . < ' C =<' EC .' =<69 1 <;<=' ;' 9<A;' . A@<' =BD . 1==1I<' ' C<' +;1 F<=' 9<1? <@' 'D<61<I<' CA ' C<' - 1 ?' EA=' A' G;1= <;' 1 ' C<' CA @=' 9' AMA;1J' C< ' G; F6A1 . <@' OA= ' 61<B < A ?< <;A6' 9' C<' >1 ?@ . ƒ B 1ƒ C<' <PGB6=1 ' 9' C<' A;@1 A6ƒ A @' @e' ?< <;A61==1 . ' 9' C<' 9 ;F<=' C<' - 1 ?' A B66<@' C1=' @<F;<<ƒ A @' ;@<;<@' C<' +A;61A . < ' ' ;A =9<;' 1 =<69' ' + 1 1<;=' A ' . < . D<;=' D< <@' C1=' ;@<;' A @' E< ' C<;<ƒ EC<;<' C< ' E<;<' G;<=1@<@' I<;' D ' 6*' AFC' A; . ƒ C<;<9 ;<ƒ EA=' E' =BGG ; <@' D 'A' GA;61A . < ƒ A=' 1 ' C<' 1 . <' 9' C<' <A?B<

C<' E ' GA; 1<=' E<;<' E<A; ' 9' C1=' @1=A= ; B=' EA;N' A @' AMA;1 ' =<< . <@' 'D<' C<' 6 ' D= AF6<' ' C<' F F6B=1 ' 9' A' G<AF<' CA;6<=' @<' ;;A1 <' AGG; AFC<@' E1 C' A ' A; . ' ' C<' A==1= A F<' 9' C<' +;1 F<=N A @' C<' <?< ' EA=' A6;<A@ ' . <@1 A 1 ?' A' ;< ;<A 'D< @' C<' 1;<' C<' E1=<' . < ' EC ' E<;<' AD B ' C<;' @1==BA@<@' C<;' 9; .' GB 1 ?' 1 ' G;AF 1F<' 611=' 9A A6' G; K<F ƒ A @' B;?<@' C<;' < ' F<' . ;<' ' @ ' I1 6< F<' ' C<;' A99<F0 1 =' '6< ? C' =C<' @1= . 1==<@' AMA;1 N A @' JB1 1 ?' C<

B13' A' =<F @' 1 . <ƒ C<' ;< 1;<@' ' <@A ƒ 6<AI1 ?' C1=' .< 9 AY ;1(ƒ F;<A B;<=' AD B ' C<' LB<< ƒ A @' C; B?C' C< . ' = 16ƒ F 0 ' ' 1 B1 ?' ' @1;<F ' C<;' F B =<6=' C<' G< G6<' 9' +A;1=' ;<F<1I<@' C<' <E=' 1' C<' A;@1 A63=' @1= . 1==A6'1I1 C' < CB=1A= 1F' @<61?C ƒ @#ƒ EC .' 1 ' AFFB=<@' 9' A66' 1 =' =B99<;1 ?=ƒ EA=' 9 ;F<@' ' JB1 ' C<' FAG1 A6' C<' GA 1A;@=' . A@<' I<; B;<=' ' C1 . ƒ A @' =< 1 ?' B ' E1 C' C<' %B><' 9' ;;A1 <ƒ C<' C;<E' C1 . =<69' 1 ' C<1;' A; . =' C<' F A@KB ;' I1=1 <@' C<' - 1 ?ƒ ;<F<1I<@' C<' ;<@'CA ƒ A @' A;;A ?<@' C<' A6' ;< B; ' ' +A;1=ƒ EC1FC' B1=' : ' ;< < <;<@' ' C<' =' F D<;ƒ A1 1@=' 1C<' C<' -1 ?' <;=' AFF6A . A 1 =' 9' C<' G< G6<' C<' - 1 ?' F 91 <@' C1=' I< ?<A F<' ' C<' DA 1=C . < ' 9; .' C<' FAG1 A6' 9' C<' %B><' 9' ;6<A =' A @' C<' 6<A@<1'=' 9' C<' ;<I 6 ' C<' F A@KB ;ƒ C< F<9 ; C' > E ' A=' A;@1 A6' @<' < Mƒ A6 . =' A6 <' GG 9<@' C<' ;< B; ' 9' A;@1 A6' AMA;1 ' <' @<=1;<@' ' AGG<A;' 9 ; . 1@AD6<ƒ A @' <I<;' E< ' AD; A@' E1 C B ' D<1 ?' =B;; B @<@' D ' A' B . <; B=' ?BA;@' %1=F < <@' 1C' C<' B;ƒ 1 ' =G1 <' G9' C<' D;1661A ' 99<;=' EC1FC' E<;<' . A@<' C1 . ƒ C<' . <@1 A <@' A' 9;<=C' A AF>' A?A1 ='1 N DB ' <' 9' B= ;1A' A 1F1GA <@' C1 . ' D 'CAI1 ?' C1 . ' A1 <= <@' A @' 6 @?<@' 1 ' 1 F< <=

C<' GA 1A;@=' CA@' G; 91 <@' D ' C<' F1I1ƒ ; BD6<=' 1 ' ;A F<N 9 ;' A=A6ƒ 1 ' A6 ƒ O ;AI<61 <=ƒ A;@1F>ƒ A @' %B >1;>ƒ CA@' 9A66< ' 1 ' C<1;'

; G=' 6A @<;=' EA=' = 166' C<' C<A ;<' 9' EA;N' A @' C<' DA 6<' 9' C<'
><<#@'B3'<M@' %B <=(' 1 ' EC1FC' B;< <' ;1B . GC<@' I<;' C1=' 166B= ;1 B='
#^>+@ _', . F ;1IA6(' FAB=<@'%B >1;>' '9A66' 1 ' C<'CA @=' 9' C<' I1F ;(
EC '1 . . <@1A <6 ' ;A =9<;;<@'1 ' ' C<' ?61=C' C1=' I1F ; (9 66 E<@'D '
C<' FAG B;<' 9'A'?;<A ' B . D<;' 9' hI =' A @'9 ; ;<==<=(@<F1@<@' +C161G' '
1 '9AI B;' 9' G<AF<(' EC1FC' EA=' <JBA66 ' <F<==A; ' ' C<' E ' >1 ?@ . ='
9<;< F<=' E1 C' C1=' GB;G =<'1 ' I1<E'E<;<' C<6@' ' C<' =6<' 9'+C<A=A =(
9 ' (1@A== A(D< E<< ' AMA;1 ' A @'% ' B1=' @<' A; N A @' C< 'A;<'
9A . B=' ' AFF 1 . ' 9' C<' @1G6 . A 1F' A6< =' @1=G6A <@' D ' C<' E ' <? 0
1A ;=' C<' G<AF<(' =1? <@' ' C<' 2 C' I< . D<;(*7!(' A @' > E 'A='
@>?@'B3'<M@' C<'+<AF<' 9' C<'+KB;< <<=(' EA=' C<' . ='B=<9B6'A @' . < . ;AD6<
K7@+@@A' , . ' AMA;1 3=' 619<' ('1 ' +C161G' ; ' F 91; . <@' C<' F<=0
=1 ' 9' +1? <; 6(A @' A' ?;<A ' G ; 1 ' 9' ; 1=' A @' 6=AF<' ' ;A F<(
EC1FC' ;<= ;<@' ;;A1 <(DB ' ;< A1 <@' C<' @BFC ' 9' (A;(B==166 (A @'
<;@A? <(' BG' ' C<'9 ' 9' C<'+ ;< <<=(' A @' . A ' E =' 1 ' BP< . D B;?'
' EA=' = 1GB6A <@' CA ' @'1 =C B6@' =BD . 1' ' C<' - 1 ?(E1 C' C<'
) >77$>?@'B3' A==B1B F<' 9'A' GA;@ 'A @' C<'? I<; . < ' 9' (B1 ?B @ (' A @'
6 BAP1I(1** ' B1=' : ' =C B6@'<=G B=<' A;1A C<;<=A' 9' B= ;1A(
C<' @AB?C <;' 9' +C161G' ' C<' @ E; ' EA=' 91P<@' A ' 91I<' CB @1 <@'
C B=A @' F; E =(A @'+C161G' . A@<'1 'A' F @1 1 ' CA 'C1=' @AB?C <;' =C B6@'
;< B F<' 9 ;' C<;=<69' A @' C<;' @<=F< @A =' <I<; '91?C ' =C<' . 1?C 'CAI<' '
C<' =BFF<==1

; . E<66' @1<@(A @' ?6A @' EA=' F<' . ;<' G6B ?<@' 1 ' A' = A <' 9'
A A;FC ' CA;6<=' BA; (' EC ' ' C1=' FFA=1 'CA@'1 ' IA1 ' = 61F1 <@' C<'
=BGG ;' 9' AMA;1 (EC ' C B?C ' C1=' FAB=<' @<=G<;A <(EA=' ;<FA66<@' (
?6A @' A' 9<E' . C=' A9 <;EA;@=(A @'G; F6A1 . <@' - 1 ?' D ' C<' K 6<' 9'
CA;6<=' ' < G 6@(A ' =<I< << ' <A;=' 9' A?<(CA@' D A1 <@' C<'
. G<;1A6' @1? 1 ' 1 ' *72(' C<' @<A C' 9' <;@1 A @' (C1=' 9A C<;N
A @' CA;6<=' 0B= AIB=' CA@';<1? <@'1 ' E<@< '=1 F<' *7 N' C;1= 1 A(D1='
;<6A 1 (A @' @AB?C <;' 9' 0B= AIB=' @ 6GCB=(CAI1 ?' AD@1FA <@' 1 ' C1=3
9AI B;(1 ' ;@<;' ' @<I <' C<;=<69' <PF6B=1I<6 ' ' 61 <;A B;<' A @'=F1< F<'
B; G<' EA=' A ' G<AF<(A @' ;A F<' CA@' A;;1I<@' A ' C<' . . < ' EC< '
' 111=' : ; ' EA=' ' A><' C<' ;<1 =' 9' ? I<; . < ' 1 ' C1=' E ' CA @='
AMA;1 (AD= 6B <' ;B6<;' 9' C<' >1 ?@ . (A @' G ==<==<@' 9' A' F 6 ==A6
9 ; B <(EA=' @;AE1 ?' <A;' C<' F6 =<' 9' C1=' 619<' B66' 9 'A P1< ' '
AFF B ' 9' C1=' 166' AFJB1;<@' ;1FC<=(EC1FC' = . <' AB C ;=' @<F6A;<' ' CAI<'
A . B <@' ' 919 ' . 1661 = , <JB1IA6< ' ' . ;<' CA ' A' CB @;<@' A ' C<

G;<=< '@A C< 99<;<@ C< .' ' C< -1 ?@<F6A;1 ? CA' C< '6 ?<; E1=C<@ ' G ==<==' C< .' CA' C< 9 ;<=AE' >' G6AF<) B9=' : ;< B; <@ C1.' C1=' 9 ; 1. <N A @ AMA;1' @1<@ ** A9 <; CAI1 ?' =<FB;<@ C< . =' D;1661A ' G =1 1 =' 9 ;' C1=' 91I< 1<F<= 9 EC .' <A;1< @< A F1 1 CA@ D<< ' D<6 I<@ D ' C< B ?' . A;FC

;A F< EA=' GA; 6 '1 @<D <@ ' AMA;1 '9 ;' C< A@IA A?<=' =C< @<;1I<@ 91 .' C< G<AF< 9 <= GCA61A' A @ CA' 9 C< + ;< <<=N A @'1 '1=' 1. G =0 =1D6< ' @< ' C< G ==<==1 ' 9 ?;<A' A6< =' ' C1.' EC ' =1? <@ C<=< ;<A 1<=A EC ' E1F< ? I<; <@ ;A F< 9; .' C< @<G C=' 9 C1=' <P16<A @ G;<=<;I<@ C< =BG;<. < AB C ;1 ' ' C< F6 =< 9 C1=' 619<' B @<;' =BFC' A' G;1 F< A=' B1=' : A A @ E1 C' =BFC' . < 'A=' A;@1 A6 @< < M' A @ C< O;<A' @'1 9 ;' C1=' GG < =' <@<=<;I<=C E<I<;?;<A';<G; AFC' 9 ;' CAI1 ?' 9;<JB< 6 ' A@< C<'1 <;<= =' 9 ;A F< =BD ;@1 A < ' C1=' E ' D< <;' @1G6 . A 1=' CA' A@ . 1 1= ;A ;A @' 91166 9 F < . G' 9 ;' C< G< G6< AMA;1' < ;1FC<@ C1. =<69 E1 C B' =F;BG6< A' 1 =' <PG< =< @1@' C1 ?' 9 ;' C<'1 <; A6 G; =G<;1 ' 9 C< A < A @ 6<9' ;A F< E1 C B' F;<@1 A @ A6 . =';B1 <@' < EA=' =>169B6 1 ';<A@1 ?' . < 3=' FCA;AF <;= A @ C1=' EA=' 1 ' ?;<A' GA;' C< =<F;<' 9 C1=' G E<;' < ?AI< 6D<;' ' B1=' : A A @ @1I1 <@ C< G; B@ A @ @ . 1 <<;1 ?' =G1;1' 9 CA' . A;FC' C< <?61?< ' . A <;'1 'EC1FC' C< CA@ D<< ' <@BFA <@ EA=' A' F;1. < A?A1 ='C1.' A=' A?A1 =' C< A <N A @ C< G . G =<6 '><G' C1=' I<0 ;<1? '1 '1? ;A F< CA' C< . 1?C' C1. =<69 D< = ' . BFC' C< 6 ?<;' <F<==A; ' 'C1.' < AB?C' C1.' C E' '6 >' A @ AF' C< >1 ?N DB' 'D< <1 ' ;<A61 ' EA= A 9 ;' B1=' : A C< E ;>' 9 A B;< A6 <' R' C<;< 1=' = B99 1 'C1. A`=A1@ 61< A;@1 A6 < @A [' =B966F1< '9 ;' 9 B;' >1 ?=A @' C< . A;FC' 9 E< ' <A;=' 9 A?< A B F<@ C' C< @A' 9 66 E1 ?' 61< @<A C' 9 C1=' 1 1= <; A 1 ' EC =< CA @=' EA=' C< F<9 ; C' ' D< C< FC1<9 AB C ;1

A;6A' @< CA IA66 + ;<=1@< ' 1' C< B F16 9 C< 6<;? CAI1 ?' A=><@' C1.' ' EC .' C< EA=' E' 'AGG6 'E1 C' ;<9<;< F< 'A99A1;=' 9 A < B1=' : ';<G61<@ [' ' 4' ; .' C1=' . .< ' C< D<FA. < C< = 6< ;1 6<;' 9 ;A F< A @ F 1 B<@ 'D< = ' 166 C1=' @<A C

+ '

' ! ' ' ' " ')' ' ' ') - ' ' ' '

** * 8

3(&' : 'EA=' < @ E<@' D ' A B;<' E1 C' A "1 = 1 F 1I<' 6 I<' 9'?6 ; (;@<;(A @' G E<;' 1=' FCA;AF <;' G ==<==<@' C<' A 1 A6' FCA;AF <;1= 1F' 9' A '1 0 =A 1AD6<' <<@' 9' A@ . 1;A 1 (A @' A ' C<' . . < ' EC< ' C<' G>' C< ? I<; . < '1 ' C1=' E ' CA @=(C<;<' EA=' A' 9 ; B A<' A @' ;< . A;>AD6< F 1 F1@< F<' D< E<< ' C1=' E ' 1 F61 A 1 =' A @' C<' E1=C<=' 9' C1=' G< G6<' 9 <;' CAI1 ?' < @B;<@' C<' =F B;?<=' 9'1 <= 1 <' A @' 9 ;<1? ' EA;(;A F< , ' E1 C B '1 <;1 ;' A@ . 1 1= ;A 1 (' 91 A F<=(;' F;<@1 , ##IA=' <=G<F1A66 '1 ' <<@' 9' = . <' F< ;A61M1 ?' G E<;' EC1FC(=C B6@" =BD@B<' A66' 9AF 1 =(A @' . A><' C<' 1 . . < =<' ;<= B;F<=' 9' C<' >1 ?@ .' G; . <(' C<' 1 <;<= =' 9'A' 9<E(DB ' C<' ?6 ; ' A @' G; =G<;1 ' 9' C<' A 1 'A '6A;?<' B1=#1: '9 B @<@' C1=' G E<;' '9<A;' A @' A@ . 1;A 1 ' <' ;< <= AD61=C<@' ;@<;' 1 ' C<' A <(A @' A=' 6 ?' A=' C<' @< . A @=' 9' C1=' G;1@<' E<;<' 1 ' AFF ;@A F<' E1 C' C<' 1 0 <;<= =' 9' C1=' >1 ?@ .(C1=' ;<1? ' 99<;<@' A 'B 1 <;;BG <@' =<;1<=' 9' . A; I<6=' A @' ;1B . GC=' <' ;A1=<@' ;A F<' ' A' C1 C<; ' B C<A;@ 9' @<?;<' 9' G E<;' A @' =G6< @ B;

C<' 91;=' AF =' 9' C1=' O I<; . < ';<I<A6<@" C<' K<A6 B=' '< <; A1 <@' D ' C<' +;1 F<' E1 C' ;<=G<F ' ' C1=' AB C ;1 (A @' C1=' @< <; . 1 A 1 ' ';<A1 ' 1 ' <PF6B=1I<6 '1 ' C1=' E ' CA @=' ' AFF ;@A F<' E1 CQ C<' A@ I1F<' ?1I< ' C1 . ' D ' AMA;1 (C<' @<F6A;<@(1 ' C<' 91;=' G6AF<(CA ' C<' E B6@' CA I<' ' +;1 . <' 1 1= <;' 1=' F B F16(9 ; . <@' D ' C<' A;@1 A6(F =1= <@' 9' C<' CA 0 F<66 ;' <?B1<;(- <<G<;' 9' C<' <A6=' N @<' <' <661<;(1 1= <;' 9' A;' N %<' <(1 1= <;' 9' ;<1? ' 99A1;=' N A @'%<' BJB< (1 1= <;' 9' 1 A F<' C<' - 1 ?(F I1 F<@' D ' 6D<;' 9' C<' F;1 . 1 A6' <PAF 1 =' 9' C<' 6A <;(A @' G<;CAG=' . ;<' 1 @1? A 'A ' C1=' 6BPB; 'A @' . A? 191F< F<' CA 'A ' C1=' EA ' 9'C <= (9 ; . <@' C<' ;<= 6B 1 ' 'CAI<' C1 . ' =<1M<@' 1 ' C<' . 1@=' 9' A' =B . G B B=' 9s <' EC1FC' C<' ?AI<' A ' C1=' F 1 . ; '=<A 'A ' ABP(' C<' @A ' 9' C<' . A;;1A?<' 9' < ;1< A' 9' ?6A @(=1= <;' 9' CA;6<=' (E1 C' C<' %B><' 9' ;6<A =(C<' - 1 ?3=' D; C<;' <' ;<9;A1 <@' 9; .' C1=(C E<I<;

5` , ((& (' ') + ' : 4' '8* ' $

FA;;1<@' C<' <;; ;' 9' C<' ;< FC'A;. =' <I<' ' 6?1<;=' C<=<' <PG<@1 1 =' 'A' F<; A1 ' <P < ' <. G6 <@' A @' ;<. I<@' C<' 6@' @1=F1G61 <@' DA @=' 9' C<' 1. <' 9' C<' ; @<' B1=' F;<A <@' A' <E' A;. (A @(E1 C' C<' A==1=0 A F<' 9'C1=' . 1 1= <;(BI 1=(= 'A @'=BFF<== ;' 9' <' <661<;(?AI<' ' C1=' A;. 'A ' ;?A 1MA 1 ' EC1FC' EA=' C<' A@. 1;A 1 ' # @' < I ' 9' B; G<' C<'? I<; ;=' 9'G; I1 F<=' E<;<' @<G;1I<@' 9' C<'G E<;' 9'6<I 1 ?' ; G=(A @' 9'@1=G =1 ?' 9' C< .'A ' C<1;' E 166N C<'?;<A ' . 161 A; ' 191F<=' E<;<'=BG0 G;<==<@(A=' E<66 A=' ;A >' A=' @1= 1 F '9; .'<. G6 . < ' C<' D<= ;A6 9' F . . 1==1 =' A @' A66 G; . 1 =' E<;<'. A@<' C<' =G<F1A6 A ;1DB <=' 9' C<' . A;FC N C<' ; G=';<F<1I<@' A'B 19 ; . N A66 C<'D;A FC<=' 9' C<'=<;I1F<(A @' <=G<F1A66 ' C<' A; 166<; ' A @' < ?1 <<;=(C<' F . . 1==A;1A (A @' C<' <JB1G. < ' 9' C<' 1 9A ; (;<F<1I<@' A';<?B6A;' ;?A 1MA 1 ' C<' A;. ' F<A=<@' 'D<' A '1 = ;B. < '1 ' C<'CA @=' 9' C<' 9AF 1 B=' 1 C' C<' - 1 ?' 9 ;'1 =' = 6<' C<A@(1 ' F ;1DB <@' G E<;1B66 ' ' 9 ; 19 ' C1=' AB C ;1 ' A ' A' 1. <' IC<'1 'EA=' <F<==A; ' CA ' C<' A6' AB C ;16 '=C B6@' D<' = ; ?(1 ' ;@<;' CA ' C<' A 1 '. 1?C 'D<'?;<A

;A F<' CB=' D<?A ' ' A= <' C<' 9;B1 =' 9' 6D<; 3=' I1?16A '=BG<;I1=1 ' 9' <I<; 'D;A FC' 9' C<'A@. 1 1= ;A 1 ' (; B?C 'BG'A 'A'F B <;(A @' C<'= ' 9'A' E 6'. <;FCA ' 9' C<1. =(C<'=BFF<<@<@' 1 ' <99<F 1 ?' C<'. ='@1991FB6';<9 ;. =' A @' C<'<P<FB 1 ' 9'A66'C1='G6A =' D ' C<'A1@' 9'A'= ; ?' I166 A @' 1 @<9A 1?AD6<' 1 @B= ; ' <'<= AD61=C<@' A' CA. D<;' 9' SB= 1F<(EC =<'@B '1 'EA=' '1 JB1;<'1 ' C<'F @BF ' 9' C<' 6@' 9A;. <;=' 9' C<';<I< B<=(EC 'CA@' A. A==<@' < ;. B=' 9 ; B <=(A @' ';<@BF<' A B1 1<=' AFJB1;<@' A ' A '<PF<<@1 ?6 '6 E' G;1F<, A'. <A=B;<' 9;<JB< 6 ' B KB=(DB ' A6 IA =' G GB6A;' <'=BGG;<==<@' A'. B6 1 B@<' 9' B=<6<==' 991F<=(EC1FC' >' AEA '= ' . A 'F ;1DB 1 =' ' C<' !' A @';<@BF<@(1 ' C<' F B;=<' 9'C1=' . 1 1= ; (C<' DB;@< = . <' A. 1. ' 9' AP<=' 9; .' 9116 C;<<' . 1661 =' ' C1; E ' . 1661 =' <' @;F I' BG' C<' 91;= '= A 1= 1FA6' AD6<=' EC1FC' CA@' D<< ' =<< ' 1 ' B; G<(;<@BF<@' C<' 6<?A6' 1 <;<=' ' 91I<' G<;' F< (A @' =BD0 K<F <@' C<' AFF B A =' 'A';1?1@' =BG<;I1=1 ' (' C<=<' . <A ='C<' <99<F <@' A '1. . < =<' 91 A F1A6' A. <61 ;A 1 ' ' C<' 1. <' 9' AMA;1 3=' @<A C(C<' ;<I< B<' A. B <@' ' <1?C 9 B;' . 1661 =' A @' C<' =A6A;1<=' ' 919 E (6<AI1 ?' 6 'A'=B;G6B=' 9' C1; E ' . 1661 =' 9 ;' C<' A6' ;<A=B; N DB ' A' 6D<; 3=' @<A C' C<' ;<I< B<' A. B <@' 'A'CB @;<@'A @'=1P << ' . 1661D =(EC16=' C<'? I<; . < ' 991F<=' AD= ;D<@' DB ' E< C;<<(A @' C<' A6' ;<A=B; ';<F<1I<@' 1 < C;<<' (6D<; ' G< <@' ' ;A F<' <E' = B;F<=' 9' E<A6 C(A @' 6A1@' C<'9 B @A 1 =' ,'1 ='G; =G<;1 '1 'F . . <;F<'A @'1 @B= ;

C ; $+$A<7><$B+' B3' B#J@7<

<= AD61=C<@ . A B9AF ;1<= 9 ; C G; @BF 1 C <; FC ! C< 6 >1C? ?6A==<= C<;D B;?(C< 91 < F6 C= B I1<;=(DD<I166<(A @ <@A (C< O D<61 = AG<= ;1<=(C< FA;G< = AI <;1<(A @ C< ;16>= B;= A @ = ;A F< E<= C1=FA;< C< G<;9<F 1 1 CA= A A1 <@ 1 EA FC . A>1 ?(C< 1 . G; I< . < 9 1 =D;<<@ C ;=<=(A @ C< FB6 1IA0 1 9 . A@@<; < > GA1 = =<FB;< B 6< = 9 ; C< G; @BF = C< IAP1 B= . A B9AF ;1<=N 9 1 . @<@ F 6 1<=N A @ <= AD61=C<@ FCA . D<;= 1 F . . <;F< A @ 1 =B;A F<(= ;<C B=<=(. <A = (A @ A <E = = < . FB= . = 9AI B;AD6< F . . <;F1A6 ;A =AF 1 = C< C<;CA @(C< CA= D<< KB= 6 ;<G; AFC<@ E1 C CAI1 ? ?;<A 6 =AF;191F<@ C< A?;1FB60 B;A6 1 <;<= = C =< 9 F . . <;F<(6 D G; C1D1 1 ? C< <PG ; A0 1 9 ?;A1 (DB A6= D G; C1D1 1 ? 1 = 91)H< F1;FI@A 1 1 C< 1 <;1 ; AI E # <F<==A; 9 ; C< G; <F 1 9 F . . <;F<N A @ 6D<; 1 A =C ; 1 . < @1=G6A <@(D<9 ; < C< < <= 9 A= 1=C<@ B; G<(A CB @;<@ I<=0 =<6= 9 EA;(A @ A ; A; . 9 =A16 ;= < CA@ C< G ; 9 FC<9 ; (C< CA;< <(@B? B (A @ C = < 9 (;<= A @ B6 (E611FC E<; < 9 ; 191<@ D ABDA (@<<G< <@ EA= C< EC @<I1=<@ 9 ; C< ;<F;B1 1 ? 9 C< AI (C< A;1 1 . < =F;1G 1 (; = = < . 9 F6A==<=(EC1FC 1= = 166 1 9 ;F<(A @ EC1FC =BDK<F <@ C< . A;1 1 . < G GB6A 1 9 1< F A= =(1 ; < B; 9 ; C< . A A@IA A?<= A99 ;@<@ C< . D C< A <(C< =<; I1F< 9 C< A6 AI @B;1 ? A F<; A1 B . D<; 9 <A ; = Y 1 A66 (C1= . @< 9 A@ . 1 1= ;A0 1 91B . 1=C<@ C< - 1 ? E1 C C< . <A = 9 F I<;1 ? .) 9; 1<;F C< ; C A @ <A= E1 C A 61 < 9 9 ; ;<==<=(A @ 9 ;<?A1 1 ? %B >1;>(CA F1 = <F<==A; C @<9< F< 9 C< >1 ?@ . (EC1FC EA= =CA . <9B66 = 6@ B1= : D CA;6<= (1 @<91A F< 9 C< 1 <;<= = 9 ?6A @ C< - 1 ? 6 = < 9 B= ;1A(C1= . C<;(1 * * ! +C161GG< (C1= 9A C<; 1 6AE(CA@ @1<@ 1 C< G;<F<@1 ? <A;(A @ B1=(E1 C B GA 1 ? A < 1 C< 9 ; . A6 ;< B F1A 1 . A@< D A;1A C<;<=A(1 . . <@1A <6 =< BG F6A1 . = 1 C<; A . < 6A @<;=(C< <PF6B=1 9 C< ;1?C = 9 CA;6<= (C< B ?<; = 9 +C161GG< 1= G;< <P EA= CA C< @ E; 9 C< LB<< CAI1 ? D<< GA1@(C<; ;< B F1A 1 EA= B66 A @ I 1@(A @ C< =< BG E1 C ;<=G<F C1= F B ; A ;1#C 9 ! EC1FC ;<=B6 <@ 9; . A FB= . 1 9 ;F< 1 GA; = 9 C< E B ;1<=(EC1FC ?AI< C< GA <; A6 C<;1 A?< FC16@;< 9 C< 91;= . A; ;1A?< 1 G;<9<;< F< C =<

% M$A LBLD#><$B+ $A C$G$C@C >??B7C$+ <B @>?M ; >+(A > B >+C <M@ LBA$<$B+ B3 M$A $+ ; $#K $+<B G>7$BDA ?#>AA@A SM$?M >7@ 7>CD>##K ?>##@C $+<B >?<$G@ A@7G$?@ >A <M@K ; >K J@ 7@aD$7@C

A ' B C : 4' ' 8 * ' $

9' C<' =<F @' A;1A C<;<=A& C1=' E19<& EA=' A' FC16@' 9' C<;' 9A C<;3=' 91;=' . A; ;1A?<& EC16=' CA;6<=' ' EA=' A' FC16@' 9' C<' =<F @' <' F6A1 . <@'9 ;'C<;' CA'G ; 1 ' 9' C<' E' B ;1<=' 1 ' EC1FC' C1=' FB= .' G;<IA16<@& A @' 9A161 ?' ' D A1 '1 & CA@' ;<F B;=<' ' A; . =' <' ?A1 <@' I<;' C<' . G<; ;' R < G 6@' 'C1=' =1@<' D ' . A>1 ?' C1 . 'C G<' CA' C<' E B6@' D A1 ' A' =CA;<' 6 C<' =G 16=' j I;B ? 91) .' CA;6<=' & A @' >' C<' 91<6@' A' C<' C<A@' 9' C1=' A; . ' B;< <' F . . A @<@' . @<;' C1 . N' A @' C<' EA=' AFF . GA 1<@' D ' EY;'3B7 C<G A' #ABDA 'A @' BI 1=' GA1 & C< '1 'A' ?#;<A' = A <' 9' E<A>' D @F;=9 <==& EA=' ? I< . <@' D 'A' S<=B1 & A C<;' 1 CA;@& C<' LB<< 3= **2 ** ' F 9<== ;& A @' GG =<@' DB 'A' 9<<D6<' ;<=1= A F<' ' C<' A; . =' 9 B1=' : & EC & 1 ' C<' =GAF<' 9' C;<<' E<<>=& CA@' ;< @<;<@' C1 . =<69' . A= <;' 9' ;< FC' 6A @<;=' C<' F JB<=' 9' C<' ;A FC< . W& A' DbcC ; I>+C' B3' G; I1 F<' ;B6<@' D ' GA1 'B @<;' A' <GBD61FA '9 ; .' 9' ? I<; +;ALFD*Y . W . < & EA=' 1 . . <@1A <6 ' ;<= 6I<@' & A @' AFC1<I<@' E1 C1 'A' . C' B; G<' D<FA . <' A6A; . <@' A ' C<=<' ;AG1@' =BFF<==<=& A @' A' 1 1G6<' $7A<' B>#$<$B+ A661A F<' EA=' 9 ; . <@' A?A1 =' B1=' D< E<< ' 66A @& ?6A @& A @' E<@< ' C<' 0 ;A @ +< =1 <;' 9' 66A @& S C ' @< 1 & D<FA . <' C<' = B6' 9' C1=' 6<A?B<& A @' 1 ' 9 ;F<@' CW' - 1 ?' ' =1? ' C< 7@><K' B3' $N0$>0' ;<A ' 9' 1P 6A CAG<66<' a ** b& 1 ' AFF ;@A F<' E1 C' EC1FC' M>L@##@' ;< A1 <@' 6A @<;=& DB ' EA=' F . G<66<@' ' ;<= ;<' C< ;A FC< . W

%B;1 ?' C<' F 1 BA F<' 9' C<' G<AF<& B1=' : '@<I <@' C1=' A < 1 ' ' C<'1 <; A6' A@ . 1 1= ;A 1 ' 9' C<'>1 ?@ . & A @' ' C<' A99A1;=' 9' k1<' CB;FC' 9' ;A F<& EC1FC' EA=' C< ' @1= B;D<@' D ' C<' JBA; ;<6=' ;<=G<F 1 ?' SA =< 1= . Y' <' C< ' F =1@<;<@' C E' 'AI< ?<' C1 . =<69' BG ' 66A @& A @' GI . 1=C' C<;'9 ;' CAI1 ?' A>< ' GA; '1 ' C<' ;1G6<' 661A F<' ' <' FC<;1=C<@' A' G; 9 B @' @1=@A1 ' 9 ;' <I<; ' C<;' ? I<; . < ' <PF<G ' C1=' E & A @' EC16=' C<' B?C ' 'CAI<' ;<A <@' E1 C' <I<; 'F =1@<;A 1 'A' B . D<;' 9'1 @B= ;1 B=' F1 1M< =& EC ' ;A@<@' E1 C' B=' A BA66 ' ' C<' <P < ' 9'=1P ' . 1661 =& C<' F B6@' 6 ' ;<?A;@' C< . ' E1 C' CA ;<@' A @' F < . G ' C1=' EA=' <' 9' C<' ?;<A ' 9AB6 =' 9' C1=' ;<1? ' I<; EC<;<' A @' A6EA =' C<' 9 B @' 1 ' C1=' GA C' C1=' G GB6A 1 ' 9' . <;FCA =& C<;< 1F=' A @' ;<GBD61FA =' EC =<' I<; ' <P1= < F<' 9166<@' C1 . ' E1 C' 1 @1? A0 1 & A @' EC =<' E<A6 C' ;A1=<@' BG' A?A1 =' C1 . ' < < . 1<=' 1 ' C<' E ' C< . 1

F' $G@' L7BLBA$<$B+A' B+' - !' ><<7$JD<@C' <B' '>+A@+$DA ' $AMBL' B3' L7@A ' >+C' ?B+1 C@ ; +@C' JK' ++B?@+<' " ' $+' , .2 ' #$ M<@C' DL' >' S>7' $+' <M@' MD7?M' B3' 7>+?@ ' M@' ADJR@?<' B3' C$ALD<@' $A' >' ; KA<@7K' J@KB+C' <M@' 7@>?M' B3' MD ; >+' 7@>AB+ ' M@' '@AD$<A' ><<>?Q@C' <M@A@' L7BLBA$<$B+A'] >+C' <M@$7' ; BA<' 3> ; BDA' >CG@7A>7$@A' S@7@' d7+>D#C ' >+C' >A?>#' >D<MB7' B3'<M@'&6 7BG$+?$>#' @<<@7A O

=GC<;<=' 919< @<@D '= .< . <@A6=EC1FC';<G;<=< <@C< 1<@+; I1 F<=
= Cj' A;D1<;=' 9 B; G<A @ 1;;1A<@A' C<1.G<; 1 < F< 9F<; A1'
?AM< <<;=C< - 1 ?=<1M<@BG ' C<=<9;1I 6 B=G;< <P=A @@<F6A;<@EA;'
BG ' C< %B FC'}A' C<=A.<1.<@< AFC1 ?9; .' C<1;' AKA1='
A661A F< CA;6<=: - 1 ?9 E<@< A @ CA1@<= - 1 ?
& 9 ?6A @A6EA=;<A@ ' '=< '1=BGG ; A @ '=AF;191F<
C<1 <;<==9C1=G< G6< 'C1=G6<A=B;<=Y
C< %B FC'96<<=F I<;<@ C<=<A=A @=<FB;<@ C<F . .<;F1A6G; =0
G<;1 ' 9 66A @D 'G; <F1 ?1==. A? 191F< '<=AD61=C
. < =1 C< A=' @1<=' B1=. I';<1 9 ;F<@C1=E ' L7@L>7><$B+A 9
D '9196 ' ?61=C'I<==<6=#A @<<;<@ 66A @A' C<C<A@ 9

I M>7#@A' '>' ><MB#$?$+'M$A'M@>7<K'>AL$7$+ '<B'>JAB#D<@'LBS@7'S>A'MBA<$#@'<B'<M@'
+$<@C0 7BG$+?@A'3B7'<M@' G@7K'7@>AB+A'SM$?M'7@+C@7@C'<M@$7' >##$>+?@' L7@?$BDA'<B'
7B ; S@##' @' M><@C'8<M@ ;' >A'3B7 ; $+' >' @LDJ#$?>+'>+C' 7B<@A<>+<' <><@']'>+C'M@'
S>A'77<><@C' > >$+A<'<M@' <><@A0 ! @+@7>#' SM$?M'M>C'C@L7$G@C'<M@'KBD+ ' 7$+?@'B3'
7>+ @' M$A' +@LM@S' B3'<M@' C$ +$<K'B3' <>C<MB#C@7' MB ; @' AB' L7BDC#K'$_K'M6' 3> ; $#K'
M@A@' G>7$BDA' ; B<$G@A' >+C'@AL@?$>##K'<M@'MBL@'B3'3$+C$+ '$+'<M@'$+<@7@A<@C' ; D+$3$?@+?@'
B3' BD$A'' ' 7@ABD7?@A'SM$?M'SBD#C' @+>J#@' M$; '<B'C$AL@+A@'S$<M'<M@' +@?@AA$<K'B3'
>AQ$+ ' >$C' 37B ;' M$A' >7#$> ; @+<' C7@S' M$;' <BS>7CA' 7>+?@]' >+C' M@' M>C' A?>7?@#K'
7><3@C'<M@'<7@><K'B3' $N0#>0 M>L@##@' SM@+'<M@' DQ@' B3' D?Q$+ M> ;' >+C'<M@' 7$+?@AA'
@+7$@<<>'B3' + #>+C' D?M@AA'B3' 7#@>+A' J@ >+'<B'C$A?DAA'<M@' ; @>+A'B3'J7$+ $+ '<M@'
<SB' BD7<A'$+<B' >' A<7$?<' >##$>+?@' ' ; B7@' A@?7@<+@ B<$><$B+' MBS@G@7' >+C' B+@'
D+Q+BS+'<B' D?Q$+ M> ;' M$; A@#3' S>A' J@$+ ' ?>77$@C' B+' $+' B+CB+' M@' $+ 'M>C'
>#7@>CK'?B+3$C@C' M$A' A@+<$; @+<A' 7@AL@?<$+ ' 7@#$ $B+'<B' ?@7<>$+' ><MB#$?' @+<#@ ; @+' B3'
M$ M'LBA$<$B+' $+' M$A' Q$+ CB ;' ' <B' $7' MB ; >A' #$3# B7C' >+C'<M@' B7CA' 7D+C@# >+C'
7#$+ <B+' SMB' S@7@' M$A' $+<$; ><@' ?B ; L>+$B+A' M>7#@A' ' $+3B7 ; @C' <M@ ;' $+' <M@'
L7@A@+?@' B3'M$A' J7B<M@7' B3' M$A' $+<@+<$B+' B3'@+<@7$+ '$+<B' +@ B<$><$B+' MBS@G@7' >+C' B+@'
S$<M'>' G$@S' <B' <M@' 7@0@A<>J#$AM ; @+<' B3'<M@' ><MB#$?' 7@#$ $B+' $+' + #>+C' >+C' ABB+' 3<@71
S>7CA' >' <M@' ?B ; ; @+?@ ; @+<' B3' <M@' K@>7' , 5 '<M@' <SB' Q$+ A' ?B+?#DC@C' >' 3> ; BDA'
<7@><K' SM$?M' 7@ ; >$+@C' A@?7@<' CD7$+ 'M>#3'>' ?@+<D7K' K'<M$A'<7@><K' M>7#@A' 'JBD+C'
M$; A@#3' ,A<'<B' @A<>J#$AM'<M@' ><MB#$?' 7@#$ $B+!$+' M$A' <>@A]' +C#K'<B' D+$<@'M$A'3B7?@A'
S$<M'<MBA@'8B3' 7>+?@' 3B7'<M@' C@A<7D?<$B+' B3' <M@' @LDM#$?' B3'<M@' +$<@C0 7BG$+?@A'
$; ; @C$><@#K'>3<@7'<M@'SB7Q' B3' ?B+G@7A$B+'AMBD#C' M>G@' J@@+'@33@?<@C' $+' ! 7@><' 7$<>$+'
M@' ?B+aD@A<A'<B' J@' ; >C@' S@7@' CGC@C' $+' >+<$?$L><$B+' J@<S@@+'<M@' <SB' LBS@7A'S$<M'
<M@'@N?@L<$B+'B3'>' L7$+?$L>#$<K'7@A@7G@C' 3B7'<M@' 7$+?@' B3' 7>+ @' BD$A'' ' B+' M$A'
A$C@' D+C@7<BBQ'<B' $G@' <B' <M@' $+ ' B3' + #>+C' ,'L>K>J#@'aD>7<@7#K'<B'@+>J#@'
M$;'<B'@33@?<'<M@'?B+G@7A$B+'B3'M$A'ADJR@?<A' D<'SM@+' M>7#@A' '<MDA'@+<@7@C'$+<B'>+'
@+ > @ ; @+<'<B' BDG@7<'M$A'L@BL#@'M@'M>C'<>Q@+'?BD+A@# B3'M$A'A@># 3B7'M$A'+@S'7@#$ $B+'
7><M@7'<M>+'B3'M$A'L7DC@+?@' @'S>A'ABB+'3B7?@C'<B'7@?B +$A@'<M@'@N<7@ ; @'C$33$?D#K'B3'
?B ; ; @+?$+ 'JK'<M@'>??B ; L#$AM ; @+<'B3'<M$A'@+<@7L7$A@'<M@'@N@?D<$B+'B3'M$A'> 7@@ ; @+<'
SM$#A<' BD$A'']'B+'<M@'B<M@7'M>+C'S>A'@> @7'<B' >$+'LBAA@AA$B+'B3' B##>+C' +'
$; LB7<$;'<?M>+ @'S>A' ; >C@' $+' <MB' A@?7@<' ?B+G@+<$B+'J@<S@@+'<M@'<SB'Q$+ A'<M7BD M'
<M@'$+<@7G@+<$B+' B3'<MB' 7$+?@AA' @+7$@<<>' B3' + #>+C'SMB'S@+<' <B' BG@7'<B' ?B+3@7'
S$<M'<M@' $+ ' #$>7#@A' 'M@7'J7B<M@7' <' S>A'> 7@@C'<M><'<M@' ?B+G@7A$B+' B3' + #>+C'
AMBD#C' JB' >C?BD7+@C' <B' >' ; B7@' 3>GBD7>J#@' BLLB7<D+$<K'SM@+'<M@' ?B+aD@A<' B3' B##>+C'
AMBD#C' M>G@' L#>?@C'<M@' $+ '$+'>' LBA$<$B+'$+' SM$?M'MB' ; $ M<'D+C@7<>Q@'$<'S$<M'AD??@AA

A' CB @;<@' C B=A @' . < (' AFF . GA 1<@' D ' B;< <(' ABDA (' BP< . ' D B;?(' A @' BI 1=' C<' 6A <;' G; I1@<@' E1 C' A@ . 1;AD6<' 9 ;< C B?C ' 9 ;' C<' <JB1G . < 'A @' =BD=1= < F<' 9' C<' ; G=' D ' C<' <= AD61=C . < (' 166' C< ' B C<A1@' 9(' 9' . A?AM1 <=' 9'F6 C1 ?' A @' G; I1=1 =' @1' EA=' 1 ' F . ' . A @' 9' C<' A; . ' <I<;' CA@' =BFC' 9 ; . 1@AD6<' G;<GA;A 1 =' D<< ' . A@<' 9 ;' C<' F JB<=' 9'A' 61 6<' A <(' A @' C1 ?' 1=' . ;< ' C<' C B;' A @'?6 ; ' 9' 66A @' CA ' C<' 1 . . < =1 ' 9' C<' G;<GA;A 1 =' . A@<' ' F;B=C' 1 ' A' CB @;<@' C B=A @' ; G=(' =BGG ; <@' D ' A' 9 ; . 1@AD6<' A; 166<; (' A @' 1C1A11 ' 9' . . A @<@' D ' C<' . =' F<6<D;A <@' ?< <;A6=(' C<' 1 <@ 11 A @' +; I1 F<=' CA@' DB ' ' GG =<' A' B ?' +;1 F<' 9'A'9<<D6<' F 0 = 1 B 1 (' EC ' CA@' =<< ' <1 C<;' =1<?<=' ;' DA 6<=(' A @' AD B ' E< 91I<' C B=A @' ; G=' 166' AFFB= . <@' ' EA;' +;1 F<' 1661A . ' 9' ;A ?<' A ' E< E ' <A;=' 9' A?<' EA=' <6<F <@' D ' C<' I 1F<' 9' C<' A 1 ' AG A1 0< <;A6' 9' C<' 6A @' 9 ;F<=(' A ,@' C<' 0 ;A @ +< =1 <;(' S C ' @<' 1 (' EC I1<E<@' C<' 1 96B< F<' 9' C<' B=<' 9' ;A ?<' E1 C' =B=G1F1 (' CA@' 9 B @' 1 ' <F<==A; ' ' F =< ' ' C1=' FC 1F<' 1661A . ' B;=<@' D< <A C' A ' AGGA0 ;< 6 'GC6<? . A 1F' < . G<;A . < 'A ' A;@< 'A . D1 1 (' A @' A' ?;<A ' C1;=' 9 ;' ?6 ; ' 1=' 1 <66<F ' EA=' AF 1I<' A @' G< < ;A 1 ?Ñ C1=' F B;A?<' 1 61;<G1@' A @' B @AB <@' D ' ;<I<;=<' <' F B6@' 'FC<F>' C<' ;;< 'EC1FC' 96 E<@' @ E ' BG 'C1=' F B ; Ñ A @' A66' C<' G6AF<=' ' C<' C1 <' A @' C<' ==<6' 9<66' 1 ' C<' CA @=' 9' C<' ;< FC

C<' +;1 F<' 9' ;A ?<(' 1 '@<9AB6 ' 9'=B991F1< ' ; G=' '=BGG ; ' C<' FA . 0 GA1? '1 ' C<' G< ' 91<6@(' CA= 16 '9 ; . <@' 61 <=' D< @' C<' C1 <(' EC1FC' C<' = '=AE' 1 'E B6@' D<' 1 . G ==1D6<' '@<9< @' C<' GA==A?<' 9 61I<;(' . ;<' D A= <@' 9' CA ';<A66 '?6 ;1 B=(' EA=' AFC1<I<@ 5E1 C B 'G<;16' B @<;' C<' < <=' 9' C<' - 1 ?(' 1 ' C<' G;<=< F<' 9' C<' %B FC(' EC ' E<;<' '1 9<;1 ;' 1 ' B . D<;=' ' . A><' A ';<=1= A F<' '1 . G;B@< ' FCA;?<' F =' C<' 619<' 9' C<' %B><' 9' ?B<I166<' @W ;<F<1I<@' A' E B @' A @';<=1? <@' C<' F . . A @' ' B;< <' 1 C1 'A' 9<E' . C=' C;<<' G; I1 F<=' A @' 9 ; '= ; ?' G6AF<=' CA@' D<< ' A>< (' A @' . 0 = <;@A . ' 1 =<69' EA=' C;<A < <@' ' A@@1 1 ' ' C<' <I 16=' 9' EA;(' 1 <; A6' @1==< =1 =' ;AF><@' C<' 1 <;1 ;' 9' 66A @' Ñ 9 ;' EC16=' C<' GA; ' 9' C<' 0 ;A @ +< =1 <;' S C ' @<' 1 ' E1=C<@' 9 ;' G<AF<(' 1661A . (' EC ' EA=' A' FA @1@A <' 9 ;' C<' A@ C 6@<;A <(' A @' F B6@' 6 ' ;A1=<' C1 . =<69'1 ' C<' 91<6@(' @<F6A;<@' 9 ;' EA13' S C ' @<' 1 ' G;<IA16<@(' A @' A@IA F<=' E<;<' . A@<' ' B1=' : 'D ' A' @<GB A 1 ' EC1FC' ;<F> <@' A . ?=' 1 =' . < . D<;=' C<' = =' 9' C<' 166B= ;1 B=' 0 ; 1B=' @IA A?< B=' G; G =1 1 =' E<;<' . A@<'

>AA> @'B3'<J@' J$+@i B± ' aD@'A'B3' B##>+C , 5

CW - 1 ?DB B1= @< . A @<@ < . ;<N @< . A @1 ? C<;< <= AD61=C . < 1 e 66A @ 9 C< A C 61F ;<61?1 C< @<I 1 9 A G ; 1 9 C< FCB;FC<= C< . 1=C E ;=C1G E< . 1661 = @<9;A C< <PG< =<= 9 C< EA; C< F<==1 9 A66 CA C< 1 <@ + ; I1 F<= G ==<==<@ C< ACA6 A @ C< C1 <A 91 A66 C< G;<=< A 1 C1 . <I<; <A;' 9 <PG1A ; . <@A6= A= A AF> E6<@? . < CA C< =<I< + ; I1 F<= ;< A1 <@ C<1;' <P1= < F< A @ 61D<; 1<= C; B?C C1= F6< . < F A6 <' C<=<@< . A @=C 9 ;' C< . = GA; <P ;D1 A C <PF1 <@ C< %B FC 9 C< ?;<A <= 9B; C< B; <@ C<1;' E;A C A?A1 = S C @< 1 A @ @ . 1;A6 ; <61B= @< 1 C1= D; C<;'N AFFB=<@ C< . 9 D<1 ? 1 6<A?B< E1 C B1= : N . A==AF;<@ C< . C ;< C< . 1 G1<F<=C A @ C<AG<@ BG C<1;' ;< . A1 = A C B=A @ 1 =B6 = %<=GA1;' 6< = ;<91? C C< IA JB1=C<@ C< G< <@ C<1;' @ >< = A @ 6A1@ C<F B ; 'B @<;' EA <;C 9 ;' C< GB;G =< 9 F . G<661 ? C< ;< FC <I AFBA <1 C< %B FC @ . 1;A6 B <;' = ;B??6<@ ?6 ;10 B=6 A?A1 = C< F . D1 <@ =JBA@; = 9 ;A F< A @ ?6A @C A @ C< DA 6< 9 AB6 =DA =<FB;<@ C< F A= = 9 C< <GBD61F 9; . ' A FCA F< 9 A AF>' = B1 D C B; G< ; =< 1 9A I B;' 9 66A @ C< . G<; ;' < G 6@C C< - 1 ?= 9 GA1 A @ %< . A;>C C< ?;<A <;' B . D<;' 9 C< + ;1 F<= 9 C< . G1;<C C< 6<F ;' 9 (;A @< D B;?C ;<@<;1F 1661A . C C< 9 B @<;' 9 C< C1?C 9 ; B <= 9 C1= ' B=< , #A6C A6A; . <@ A C< A . D1 1 9 B1= : C6<A?B<@ C< . =<6I <= A?A1 = C1 . C EC16= CA;6<= C1 . =<69 EA= F . G<66<@ D C1= +A;61A . < D;<A> 99 C1= ;< FC A661A F< B1= : C 1 AFF ;@A F< E1 C C< A@ I1F< 9 C1= 1 1= <;' B I 1=C CA@ F . . 1 <@ C< 9AB6 9 @1=0 ;1DB 1 ?' C1= ; G= A . ?= A B . D<;' 9 C< G6AF<= A>< C< 9 ; 191FA0 1 = 9 EC1FC B;< < A @ @W I <; &G;B@< 6 E1=C<@ @<= ; C;<A < <@ D = . A < < . 1<=C C< F B6@ F 66<F ?< C<;' =B991F1< ; G= FA; ' C< FA . GA1? A @ 1 A =CD; 1 . < C< EC 6< 9 6 6A @ EA= <IAFBA <@ E1 C C< <PF<G 1 9 0 ;AI< A @ A<= ;1FC Y

I M@ L#>+ B3 <M@ ?> ; L>$ + B3 , 5 M>C J@@+ C7>S+ +L S$<M L7B3BD+C AQ$## >+C K@< <M@ $AAD@ S>A +B< 3B7<D+>< @ >D#<A B3 @N@?D<$B+ ?>DA@C <M@ #BAA B3 <M@ 37>$<A B3 <M@ AD??@AA SM$?M M>C J@@+ >< 3$7A< BJ<>$+@C +$77@A$A<$J#@ $+?#$+><$B+ <B ; >Q@ A$@ @A0 ?>DA@C <M@ $+ <B #BA@ <M@ BLLB7<D+$<K B3 @+<@7$+ ; A<@7C> ; ! >77$AB+A S@7@ LBA<@C $+ >7?7BSC B3 L#>?@A SM$?M AMBD#C M>G@ J@@+ C@A<7BK@C >A ABB+ >A <>Q@+ M@ >7 ; K #$Q@ <M@ M$+@ >+C <M@) @DA@ SM$?M C$G$C@ >+C AL7@>C <M@ ; A@#G@A $+ >## C$7@?1 <$B+A B+ <M@$7@+<7>+?@ $+<B B##>+C ?BG@7@C > LB7<$B+ B3 <M@ @+@ ; K(A <@77$<B7K >+C ?BD#C +B< ; >Q@ > A<@L 3D7<M@7 <BS>7CA <M@ ?B+aD@A< B3 <M@ 7@A< ! @7 ; >+K >#>7 ; @C $+<@73@7@C $+ 3>GBD7 B3 <MB 7BG$+?@A >+C 7>+?@ S>A ?B ; L@##@C <B >J>+CB+ M@7 ?B+1 aD@A<A

C< ;A FC< . W C E<I<;1 @<. 191<@ C1.' 9 ;' = ' . A ' 6 ==<=' G>?D><$B+'B3' . A;FC<@' ' C< F JB<=' 9 C1=' B= ;1A GA 1=C +;1###YY#Y#Y G; I1 F< A166<=' F . . A @1 ?' B @<;'C1. ' (<=A Z 'E1 C' ;A :#FV.1W = @' C< ?< 1B=' 9 ABDA ' ' . ;< CA ' 1 <'@A =A @' <B' 7>+?@', /' EC 6< G; I1 F< EA=' F JB<;<@' 1 ' =1P' E<<>=A @' A =<F @' 1. <'E ;<= <@' 9; .' GA1 < <I<;' ';< .

C< O ;<A' @W CA I1 ?& C< +;1 F< 9 ;A ?< 1 ' 9; ' 9 C1. E' 9 B?C'C1=' 6A='DA 6< <A;' < <9 1 ' 6A @<;=' C< ;< FC' ?A1 <@' C< I1F ; DB' 1661A.' ;A661<@' C1=' ; G=' A @' C<6@' C< I1F ;=' 1 ' FC<F>' C;<< 1. <=' @W' A AF><@' C1.'E1 C B' D<1 ?' AD6<' '@;1I<'C1.'9; .' C1=' 6A='A @' 1. G< < ;AD6<' G =1 1 ' C< 6 ==' '<AFC' =1@<' EA=' 1?C 91A6'N E< =<I<' C B=A @' @<A@E<;<' 6<9 ' ' C< 91<6@' 9 DA 6<'N @W CA@' C;<<' C ;=<=' >166<@' B @<;'C1.'N C< F <='6A= <@' 9 B; << 'C B;=A @' EA=' A'@;A I 'DA 6<

B;< <'CA@' C<' '@<9< @' C< 9; 1<;=' ' C<'=1@<' 9' C< C1 <A @ C<'@1=G6A <@'1 ' C1=' FA.GA1?' A66' C< ;<= B;F<=' 9' A;' A @' A1? = 9 ?< 1B=' 9 <;' A' ;AG1@' A @' =>169B6' .A;FC' C<' F; ==<@' C< 611 <'A' +C161=D B;?& 9< 'BG ' 1 MC<1.& 9 ;F<@' 1CA'F1 ,, & $?<B7$?$', 5/' A @'A' C<'=A.<'1.<'< F B <;<@'A @'GB' '961?C' AG;A;A& C< .G<; ;3=' ?< <;A6& A @' C< 6@'%B><' 9' ;;A1 <' CA;6<=' ' 9 <;' CAI1 ?' IA JB1=C<@' C1.& B;< <' GB;=B<@' C1.' A @'FB' BG' C1=' FAIAC 'A' B@< DB;?'N 9; .' C< F<'C<'G;<I< <@& D 'A';AG1@'.A BI;<& C<'KB F 1 ' 9' C< E 'D @1<=' 9' .G<;1A6' ; G=' <'A AF><@' <A;' C<'F1 ' 9' =C<1.' C<'+;1 F<' 9'(B; I166<& EC 'F . . A @<@' <' 9' C<=<'F ;G=& A @'9 ;F<@' C1.' ';< ;<A ' <' C< ' ;< ;<A <@' C1. =<69' D<9 ;<' =BG<;1 ;' 9 ;F<=' F .0 .A @<@' D ' C< 6<F ;' 9'(;A @< D B;?& A @' >' BG' C1=' E1 <; JB <;=' 1 ' ;;A1 <' C<'< <. 'D<61<I<@' C<'FA.GA1?' 'D<'A'A '< @'N DB'9 ;' B;< <'1 'CA@' 116 'F . .< F<@' <';<=1= <@' BI 1=' A @' B1=' : & EC & A6A;.<@' A' C1=' G<;16 B=' G =1 1 & B;?<@' C1=' ;< ;<A ' (;1=#FC' A @' GC161=D B;?' E<;<' D6 F>A@<@& A @' =<I< ' C B=A @' O<;.A =' FFBG1<@' 6=AF<'N DB' B;< <'CA@'9 ;.<@' C1=' G6A =& A @'> <E'C E' '=B;G;1=<'A @' IA JB1=C' C<.' 1 C' E< ' C B=A @' .<'A @'A'9<E' FAIA6;'=< 'C1.' D ' @W& C<' ;AI<;=<@'D ' CA B=' A @' (<69 ;' C<' . B A1 =' F I<;<@' E1 C' = E& A @' =B@@< 6 'AGG<A;<@'1 ' GG<;' 6=AF<'1 ' C<' .1@=' 9' C<'< <. & EC 'D<61<I<@' C1.' 'D<'= 166'1 ' ;;A1 <' <'IA JB1=C<@' =BFF<==1I<6 'A' B6CAB=<' A @' A' 6.A;' C<' F ;G=' EC1FC' 99<;<@' ;<=1= A F<' ' 9 ;0 .1@AD6<'D @ ' 9' O<;.A' 1 9A ; ';<.A1 <@'1 AF ' B;< <'AEA1 <@'1

A ' B;>C<1 . ' 1 'A' 1A I B;AD6<' G =1 1 ' A @' ; B <@' 1 ' ' C1=' EA ' A' 9 ;0 . 1@AD6<' A; . ' EA=' @<= ; <@' 1 ' A' 9<E' . C=' E1 C' 61 6<' <9 ; ' 6=AF<' ;< . A1 <@' 1 ' C<' - 1 ?3=' G ==<==1 (A @' C<' ?< <;A6=' 9' C<' . G1;<' ;<0 F; ==<@' C<' C1 <' C1=' FA . GA1? ' <P ; <@' A' DB; ' 9' A@ . 1;A 1 ' 9; .' B; G<N' DB ' B;< <' = A1 <@' C1=' ?6 ; ' D 'G<; . 1 1 ?' C<' DB; 1 ?' 9' C<' +A6A 1 A <)' E ' F1 1<=', A @' A' . B6 1 B@<' 9' 1:='DA; 1 ?' 9 I166A?<=' D<FA . <' A' G;< ' ' C<' 96A . <=(A' @' ' A < . G ' EA=' 6<;W' DI' +A6A1 A96# . A@<' 'FC<F>' C<' DA;DA;1 1<=' 9' C<' = 6@1<;=

'6< ? C' C<' . G<; ;' =< ' A?A1 =' B;< <' <FBFB6C(C<' 91;= ' 9' C1=' ?< <;A6=' A @' C<' IA JB1=61<;' 9' C<' B;>=' A ' A1 0 CA;@' C<' E ' ?;<A ' GG < =' A ' 91;= ' . A@<' G; 9' 9'<AFC' C<;3=' =>166' D ' A' . B6 1 B@<' 9' =>161B6' . A BI;<=' EC1FC' A;<' = 166' C<' A@ . 1;A 1 ' 9' . 161 A; ' AF 1F1A =' C< ' E<;<' ' C<' G 1 (A ' 6< ? C(9'?1I1 ?' DA 6<' ' <AFC' C<;' <A;' C<' I166A?<' 9' A6MDAFC(1 ' (A@< (A @' B;< <' EA=' F 91@< ' 9' I1F ; (EC< (' I1=1 1 ?' A' DA <; (C<' 9<66' @<A@(= ;BF>' D ' A' FA ' DA66' C<' =A . <' DA66' FA;;1<@' AEA ' C<' A; . ' 9' ' @<' ' 16A1;<(61<B < A ' g9 ?< <;A6' 9'1 9A ; (EC ' =A1@' ' C1=' = (E<<G1 ?' D 'C1=' =1@<(['' '1=' ' 9 ;' . <(. ' = (DB ' 9 ;' CA ' ?;<A ' . A ' B' =C B6@' E<<G ' B;< <' @1<@' A ' C<' A?<' 9' =1P 9 B;' (. ' A' + ; <= A (C<' CA@' A@ G <@' C<' A C 61F' 9A1 C(A @' EA=' DB;1<@' 1 ' C<' . D' 9' C<' >1 ?=' A ' A1 %< 1=' <FBFB 1(1 9 ; . <@' 9' C1=' @<A C(F . G<66<@' C1=' " ' =BFF<== ;=' 0< <;A6=' @<' ;?<=' A @' ABD;B (';<GA=='C<' C1 <' ABD;B 'EA=' >166<@' EC16=' F; ==1 ?' C<' = ;<A . (A @' ;?<=' F @BF <@' C<' ;< ;<A ' C<' 9;<< F1 ' 9' ;A=D B;?' 1 . . <@1A <6 ' 91<;<@' C<' B=<' 9' 1 =' D;1@?<' 1('FA . GA1? =' ' <FBFB 1(EC ' G< < ;A <@' 1 ' 6=AF<' 0 @W A6 <' F B6@' < F B <;' C1=' ?;<A ' FAG A1 ' E1 C' =BFF<==(A @' EA=' =< ' ' GG =<' C1 . ' <' @1=G6A <@' A=' . BFC' =>166' A=' B;< <(A @' D ' E ' < FA . G . < =' EA=' AD6<' 'FC<F>' C<' G; ?;<==' 9' C<' . G<;1A6"A; . (A @' '9 ;F<' <' FBFB661' ';A1=<' C<' =1<?<=' 9' A?B< AB' A @' AI<; <' 6=AF<' EA=' <IAFB0 A <@(A @' C1=' D;1661A ' FA . GA1? ' EA=' CJ' 6A=' F @BF <@' D ' C<' E ' 166B=0 ;1 B=' ;1I A6=' C<' 0 ;<A ' @W C< F<9 ; C' I<@' 1 ' ?6 ;1 B=' ;< 1;< . < ' A ' CA 166 (EC<;<' C<' @1<@' 1 ' * N' EC16=' <FBFB 1' E1 C@;<E' 9; .' C<' . G<; ;3=' =<; I1F<

C<' %B>' <@' ;WJB1' A E<@' C1 . =<69' ' D<' D<A < '1 ' C1=' =A . <' <A;' A ' =A;D F>(<A;' ;sI<=(D ' C<' %B><' 9' ;;A1 <N' DB ' <PF< < ' =BF0 F<==<=' 9 E<@' C1=' ;<I<;=<' <==1 A' CA@' =CA>< ' 99' C<' >< 9' GA1 (A @' CA@' G6AF<@' 1 =<69' B @<;' C<' G; <F 1 ' 9' ;A F<' ==1= <@' D ' C<

"? ' *' A ' ' ' '

'_ %B FC' 96<< &(C<' GA 1A;@=' < @<AI B;<@' ' ;< A><' 1 N' DB ' %BJB<= <&(1 ' F . . A @' 9' C<' ;< FC' 96<< &(@<9<A <@' C<1;' G; K<F &(A @' ?A1 <@' CW' $?<B7$@A' B3' D0' I1F ;1<=' 9' ; . D 6(' A=' E<66' A=' ? = A&(EC1FC' F = Y @ ? = # 619<&(9' @ 11;A6' B <; ' A;=CA6' @<' 1I <' F . G6< <@' C<' @<= ;BF 1 ' 9' C<' < < . 3=' 96<< ' A=' 1 ' 1==B<@' 9; . ' +A6<; . ' C<=<' ?6 ;1 B=' G<;A 1 =' E<;<' 9 66 E<@' D ' E ' D;1661A ' FA . ' A ; LA$ +' $+' @BF <@' D ' C<' - 1 ?' 1 ' 6A @<;=' C<&C<; 1F >+C@7A ' *22' FAG B;<' 9' A6< F1< <=&(. A@<' 1 ' C<' G< ' @A ' D ' C<' B=JB< <<;A , C =<' 9' A . D;A(' A @' ' . <; , #A @ C<' I1F ; ' 9' A==<6& ?A1 <@' D ' C<' - 1 ?3=' D; C<;' I<;' C<' + ;1 F<' 9' ;A ?<&(<; . 1 A <@' C1=' EA;&(EC1FC' EA=' B KB= 6 ' F . . < F<@K' DB ' EA=' ?6 ;1 B=6 ' F F6B@<@ ' B1=' E' 9 B @' C1 . =<69' CW' A;D1 <;' 9' B13 G<' C<' A <= 0< <;A6' 9' 66A @' E<;<' E<A; ' 9' A' = ;B??6<' EC1FC' CA@' D<< ' . A . A1 <@' DB ' D ' C<1;' =BD=1@1<=' N A @' A' ?;<==' A==< . D6<@' A ' 1 . <?B< &(A ' EC1FC' G<AF<' EA=' @>?@B3 $; @0' =1?C<@' ' C<' " C' B?B= &(*2 ' 66A @' ;<F I<;<@' A66' D@+ ' *2 ' A>< ' 9; . ' C<;' @B;1 ?' C<' EA;' N GA1 ' ADA 0 @ <@' C<' ;A FC< . W&(A @' . A ' G6AF<=' 1 ' C<' E' B ;1<=' N3 C<' . G<; ;' ?AI<' BG' E ' . G<;1A6' F1 1<=' EC1FC' CA@' D<< ' A>< ' D ' A;=CA6' A' <B166A@<&(A @' ?AI<' ;1D B;?' 1 ' <PFCA ?<' 9 ;' +C161=D B;?' N C<' ;1?C ' 9' ;A F<' ' C<' G ==<==1 ' 9' 6=AF<' EA=' F 91; . <@' C<' B ?' %B><' 9' ; ;A1 <&(<GC<E' ' CA;6<=' &(;<9B=<@' ' D<' =BDK<F ' ' B1=' : &(A @' ;<K<F <@' C<' F @1 1 =' ' EC1FC' C<' . 1?C ' CAI<' D<< ' ;< <= AD61=C<@' 1 ' C1=' A <=&(EC1FC' ;< . A1 <@' 1 ' C<' FFBGA 1 ' 9' C<' ;< FC ' 1F16 ' EA=' <IAFBA <@

' C<' A@IA A?<=' =<FB;<@' D ' C<' +<AF<' 9' 1 . <?B< ' B1=' A@@<@' C<;=&(' 6<==' 1 . G ; A &(A @' EC1FC' C<' CA@' D A1 <@' D ' 9;AB@' A @' I1 6< F<' ' EAA' =A1@' 1 ' C<' ;<A ' CA ' C<' F B ;1<=' F<@<@' =C B6@ ' D<' AFF . GA 1<@' D ' A66' C<1;' @<G< @< F1<=' C<' <? 1A ;=' CA@' =BGG =<@' CA ' C<=<' F<==1 =' E B6@ D<' =< 6<@' D ' . B BA6' A?;<< . < N' DB ' B1=' : ' A==B . <@' CA ' C<' CA@' A' ;1?C ' ' =< 6<' C< . ' 1 ' C1=' E ' EA &(A @' AFF ;@0 1 ?6 ' C<' <= AD61=C<@' A' I<;<1? ' CA . D<;' A ' (<=A Z &(A @' E ' <JBA66 ' I<;<1? ' B F16=&(C<' <' A ' (;1=AFC&(C<' 61<;' A ' < M&(EC1FC' E<;<' < . G E<;<@' ' @<F1@<' E1 C B ' AGG<A6' ;<=G<F 1 ?' A66' F<==1 =' ' D1=' ; E ' (' C1=' A;D1 ;A; ' . <A=B;<' C<' - 1 ?' 9' E<@< &(C<' %B><' 9' B; < . DB;?&(9' %<' %<BP + =&(C<' 6<F ;' +A6A 1 <&(C<' 6<F ;' 9' ;sI<=&(A @' A' B . D<;' 9' C<;' G;1 F<=&(E<;<' @<G;1I<@' 9'A' G ; 1 ' 9' C<1;' @ . A1 =' A @' =B . . <@' ' ;< @<;' C . A?<' 9 ;' C<1;' C<;' G ==<==1 =' B1=' =<1M<@

; B=' G; I1 F1A6' D161 (' A6 . ='EC 66 ' < . G6 <@' 1 ' C<' A; . (' 6<A; <@ CA ' 1 ' F B6@' 6 ' G;<=<; I<' A ' AB C ;1 '1 ' C<' A<' D ' . <A =' 9'1 = F . . 1==1 =(' A @' CA ' 1 =' C<;<@1 A; ' G;1I16<?<=' E B6@'
6 ?<;' A99 ;@' 1 ' A ';<A6 1 96B< F<' C<' +A;61A . < '9 B @' BJ#@A'>+C'B3'
1 '9'1 F M =' C . 1 <@' ' C<' A@ ! . 1= ;A 1 ' 9'KB= 1F<N' A66 '<M@' >7#$> ; @+<A
G 61 1FA6' G E<;'EA=' A>< ' 9; .'1 (' A @' C<' - 1 ?' 6 ' A66 E<@' ' 1 ' C<
1 B= 1 'G E<;' 9'A@@;<===1 ?' 'C1 . ';< . = ;A F<=' 'C1=' <@1F =' <1?C '@A =
A9 <;' C< ' CA@' D<< ' ;<?1= <;<@' C<' C1;@' = A <' 6 = ' 1 =' . B 1F1GA6
61D<; 1<=' D '@1<' @<91 1 1I<' <= AD61=C . < ' 9'1 < @A =' A @' @1<' =A6<' 9' C<
G<;G< BA6' . A ;=C1G=' C<' C;<<' ;@<;=' E<;<' 91 A66 ' ;<@BF<@' ' A
5G 61 1FA6' B661 'D ' C<' - 1 ?3=' G;<KB@1F<' A?A1 =' C<' A <= O< <;A6(' A @
=' 1 I1 F1D6<' ;<= 6B 1 ' <I<;' 'F I >< C< . ' C<' FCA1 =' 9'A'F< ;A6
A@ . 1 1= ;A 1 (' C<' FFB6 ' G E<;' 9' C<' G 61F<(' <E6 ' <= A ' F;<A 9 C<
D61=C<@&Y' A @' C<' . A1 < A F<' 9'A' . B <; B=' = A @1 ?' A; . (' +[Ydd
F . G6< <@' C<' ;<@BF 1 ' 9' C<' >1 ?@ . ' 'A' = A <' 9' GA==1I<' D<@1< F< ,
A' = A <' 1 ' EC1FC' C<' - 1 ?' ><G ' 1 ' D ' C<' @AMM61 ?' ?6 ; ' 9' C1=' I1F ;1<=&
A @' C<' . A; I<66 B=' E ;>=' <99<F <@' @B;1 ?' C1=' ;<1? ' =G1;1 ?' 611 . =<69'
<I<; ' =G<F1<=' 9';< E (' C<' CA@' 1 ' C<' . 1@= ' 9'C1=' ;<1? ' D A1 <@' CA ' 9
A' F JB<; ;(' A @' C<' =BG<;1 ;' ?6 ; ' G9' D<1 ?' A' G; <F ;' 9' 61 <;A B;<&
=F1< F<(' A @' F . . <;F<' 1 C' 6D<; 3=' A==1= A F<' C<' CA@
1==B<@' F<6<D;A <@' @<F;<<=' E1 C' ;<=G<F ' ' 'A<;=' A @' , !
AIA6' A91A1;=(' A @' A66' D;A FC<=' 9'1 @B= ; (' A=' E<66' A=' ' F1I16' A @' F;1 . 1 A6
G; F<<@1 ?=' 1 ' C<' F B; =' 9'6AE' C<' IA;1 B=' <?B6A 1 =' E<;<' @1= ; <@
D ' C<' <;; ;=' A @' DA;DA; B=' G;<KB@1F<=' 9' C<' 1 . <(' DB ' C< ' ?; BG<@
B @<;' C<1;' G; G<;' C<A@=' . A <;=' EC1FC' CA@' C1 C<; ' D<< ' F 9 . @<@
?< r1<;N A @' 1 ' 1=' <=G<F1A66 ' 1 ' C1=' ;<=G<F(& CA ' C< ' E<;<' A@ . 1;<@(' A @&
1 ' ?;<A ' GA; (' A@ G <@' D ' B; G<
C<' - 1 ?' =<F @<@' 6D<; 3=' <99 ; =' D ' ?1I1r?' A ' 1 . G1r=<' '1 @B= ; (' A @' ?1I1 ?' C<' 91;= ' G6AF<' 9' C B;' A ' C1=' B; ' ' 1 < FC' 9AD;1F=' '
C1=' I 1F<' . A B9AF ;1<=' A; =<(' B;' I<==<6=' F I<;<@' C<' F<A (' A @' ;A F<

I' M@' $+ '>LLB$+<@C ' $+', 5 ' >' ; > $A<7><@ ' SMB ' D+C@7' <M@' +> ; @' B3' $@D<@+>+<' B3'
B#$?@ ' S>A' @+<7DA<@C' S$<M' <M@' CD<K' B3' S><?M$+ 'BG@7' <M@' A>3@<K' B3' >7$A ' $?B#>A' C@'
#>' @K+$B' S>A' <M@' 3$7A<' $@D<@+>+<' B3' B#$?@ ' >+C' M@' S>A' AD??@@C@C' JK' <M@') >7aD$A' 4
C(7 @+AB+ ' M@' S><?M' >+C' <M@' 3$7@0J7$ >C@' S@7@' >#AB' @A<>J#$AM@C ' M@' LB#$?@' A?7D<$0'
+$V@C' >## S7$<$+ A ' >+C' ; D#<$L#$@C' <M@' @ ; L#BK ; @+<' B3' ' ' - -# ! SM$?M ' JK'
ADLL7@AA$+ ' <M@' 3B7 ; A' B3' RDA<$?@ ' C@L7$G@C' <M@' ?$<$V@+A' B3' @G@$K' D>7>+<@@' 3B7' <M@$7'
#$J@7<K ' ' ' ' - -# ' 0S>A' >' #@<<@7' S7$<<@+' JK' B7C@7' B3' <M@' $+ ' >+C' ?BD+<@71
A$ +@C' JK' >' A@?7@<>7K' B3' <><@ ' JK' G$7<D@' L3' SM$?M' <M@' LB#$?@' A@$V@C' >+K' L@7AB+' >+C'
?B+G@K@C' M$; ' <B' L7$AB+ ' SM@7@' M@' S>A' ?B+3$+@C' >A' #B+ ' >A' <M@' ! @G@ ; ; @+<' L#@>A@C]

61 ?' 9' 1A .'=< 'A' = 6< . ' < . DA== ' ' 9 <;' C1=' F ?;A B6A 1 =' ' C<' ;< FC' A;FC&A @' ' < <;'1 'A 'A661A F<' _E1C'C1 .

C<' E ;>=' <P<FB <@' D ' 6D<; & BI 1=&A @' ABDA 'N C<' F JB<= =' 9' B;< <'A @' @WN' C<'CA6 ' 9'A'D;1661A '61 <;A B;<N' C<' #A .< 9C<' <6 JB< F<' 9' (==B< & (B;@A6 B<& 6WFC1<;&A @' W <6 'N C<' E;1 1 ?=' 9' ; <166<& 61];<& AF1 <& (16<AB& A' A1 <&A @' = ' .A ' C<;'F<6<D;A <@' .< 'N C<'G; 9 ; .@'E ;>=' 9' C<'?;<A ' C1 ><;=' A @' . ;A61= =& =BFC' A=' +A=FA6& %<=FA; <=& A6<D;A FC<& A' (;B];<&A @' A' FC<9 BFAB6@'N C<' .A;I<66 B=' A; 1= 1F' G; @BF 1 =' 9' C<' =FB6G ;=' 01;A;@ &' +B?< & =<I P&A @' B= B'N C<'A; 1= =' <=B<B;& ' 1F 6A=' + B==1 & 6AB@<' ;;A1 <&A @' <' (;B &A @' C<'A;FC1 <F =' +<;;AB6 & C<' E ' A =A;@=&Y' A @' <' = ;<N'K3 C<' =F1< 191F' @1=F I<;1<=' 9' C<' ?;<A ' .A C<.A 1F1A =' 9' C1=' G<;1 @&S'1 ' C<'91;= ' ;A >' 9' EC .' .A 'D<'G6AF<@' +1<;;<' <;.A 'N A @' 91 A66 & C<' 6AD B;=' 1.@<; A>< 'D ' C<' A= ; .<;=' +1FA;@' A @' A==1 1' 9 ;' C<' GB;G =<' 9' .<A=B;1 ?' C<' ?6 D< , #C; E' A ' 1 F .GA;AD6<' 6B= ;<'BG ' CA 'G ; 1 ' 9' C<' ; .? ' 9' B1=' : ' EC1FC' E<'CAI<';AG1@6 ' =>< FC<@&A @'F ;1DB <@' ' 6<A@' G = <;1 ' ' AGG6 ' ' C<' A;FC' C<' <G1 C<' 9' J !K'A @' ' =G<A>' 9' C<'A?<'1 ' EC1FC' C<' ;<1? <@'A=' # ' ' ,'L 'I 9

(< <A C' = ' .BFC' ?;A @<B;&C E<I<;& C<;<'E<;<'F F<A6<@' .A 'I1F<=' A @' B .<; B=' G<;16=' B1=' : S 'D<61<I<@' CA 'C<'G ==<==<@'A 'AD= 6B <' ;1?C ' I<;' C<'61I<=' A @'9 ; 1 .<=' 9' C1=' =BDK<F =&A @'FA66<@'C1 .=<6 9' O @3=' 61<B < A 'BG ' <A; C' %AMM6<@' D ' C<' G; @1?1<=' <99<F <@'1 'C1=' ;<1? & 1 P1FA <@' D '1 F<==A 'G;A1=<& I1F ;1 B=' I<;' A66' GG =1 1 & C<'A6 . =

I' 7>+hB$A') >+A>7C ' <M@' >D<MB7' B3' <M@' > @0 ! 7>?@' ; DA<' +B<'MB' ?B+3BD+C@C' S$<M' M$A' +@LM@S ' 'D#@A' >7CB+$+') >+A>7C ' SMB' ?B+A< ; ?<@C' @7A>$##@A ') >7#K ' <M@' #>?@' @+C\ ; @ ' U?

<' @' BA<7@'S>A' <M@' ?7@><B7' B3' 7@+?M' #>+CA?>L@0 >7C@+$+ ' >+C' #>$C' BD<' <M@' >7C@+A' B3' @7A>$##@A

' ; B+ A<' <M@' 7@><' @B ; @<$$?$>+A' SMB' M>G@' <@+C@7@C' <M@ ; A@#G@A' $##DA<7$B+A' JK' <M@' $; LB7<>+?@' B3'<M@$7' C$A?BG@7$@A' $+' <M@' ; ><M@ ; ><$?>#' >+C' LMKA$?>#' A?$@+?@A' >7@' @A?>7<@A' >+C' >A?>#' ' ; @?M>+$?$>+' SMBA@' +> ; @' M>A' A$+?@' J@?B ; @ 3> ; BDA' >#AB' #$G@C' ><' <M$A' L@7$BC' <' S>A'M@' SMB' 3$7A<' C@G$A@C' <M@' L#>+' B3' @ ; L#BK$+ ' A<@> ; ' >A' >' ; B<$G@' LBS@7' >+C' M@' ; >C@' @NL@7$; @+<A' B+' >' 7$G@7' $+' ! @7 ; >+K%<M@' D#C>%S$<M' >' 7@>#' A<@> ; JB><' SM$?M' >A?@+C@C' <M@' ?D77@+<' M@' $; LB7<>+?@' B3' <M$A' C$A?BG@7K' >+C' B3' <M@' ; >?M$+@?>##@C' i' >L$+(A O' M>G@' B+#K' J@@+' >LL7@?$><@C' $+' BD7' BS+' C>K' SM@+' <M@' 7@AD#<A' >7@' 0$+?>#?D#>J#@

j' <'<M@' \<@#0C@0 $##@' B3' >7$A ' $+' , ' $<' S>A' AB#@ ; +#K' C@?7@@C' <M><'<M@' AD7+> ; @' B3'P' ! 7@><O' AMBD#C' J@' >LL#$@C' <B' <M@') B+>7?M ' >+C' <M><' <M$A' AMBD#C' J@' <M@' B+#K' <$<#@' <B' J@' $+' 3D<D7@' $+A?7$J@C' DLB+' >+K' LDJ#$?' ; B+D ; @+<

+

* 8 2 7

* + C<A6 C g B1= : CA@ =B99<;<@ =1 F< * A A6 <;A 1 EC1FC EC16= 1 = B;<@ C1= < . G<;1 F61 <@ C1 . A@A 1< @< A1 < C< 9 ; . <;A <? 1= 1FA6 G; B@A @ F 6@ C<A; <@ . A CA@ D<< C< G<;= A6 < < . g 6D<; A @ C< 6A <;D C<;A . D1 1 A @ A F<; A1 = 199 <==A . A@< C< ;< FC A6 . = 9 ;?< C< ;A;< JBA61 1<= g C<; . 1 @ A C 61F ?;A @@AB?C <; g C< + ; <= A 6<A@<; ?;1GGA +;<G %@<;A1 ? @3 BD1? #A E1@ E g C< G < FA;; A @ 1 = ;BF ;<== g &) *A @ g K C< FC16@;< g B1= : A @ A@A . < @< <=GA A =C<) >$+<@+B+ =G<<@16 ;A1=<@ C<;=<69 9; . CA D=F1B< G = C< . = <6<IA <@ ;A > C<;< 1= @ BD CA C< - 1 ?A G<6@1 ? G<;= A6 =F;BG6<= A= . BFC A= C< I 1F< g GBD61F . ;A61 A C B?C CA C . 1?C =A 1=9 A F< C1= GA==1 A @ C< F6A1 . = g @B D =<F;< 6 . A;; 1 ? C<;N A @ C< <A; * 7 1= CA 1 EC1FC C1= F6A @<= 1 < . A;;1A?< 1= =A1@ CAI< A>< G6AF< ; . CA . . < B1= : AGG<A;<@ CAI< =B;I1I<@ C1 . 0 =<69 0 ;<A A6< = = 1 =C < A; B @C1 . A @ G; @BF<@ D;1661A E ;>=N ?6 ;1 B= I1F ;1<= FC<F><@ C< FB;;< g C1= A@I<;=1 1<=N DB C1= ;<= 6B0 1 = E<;< <I<;= BDK<F G;1@< ;= BG<;= 1 1 N . = g C< . CB;;1<@ C< ;B1 g C< . A;FC A @ < g C< . ;<A66 < @<@ <1 C<; C1= ?;<A <== ;G; =G<;1

< g C< 91;= A @ . = @1=A= ; B= AF = g C< C1;@ +<;1 @ g C1= ;<1# EA= C< ;<I FA 1 g C< @1F g A <= C< + <= A =A =1 F< C< FAG ;B;< g A FC<66<A 61I<@ G<AF<AD6 C< @1F g A @ =BD . 1==1I< C< 0 I<; . < A @ E<;< A= @1=0 1 ?B1=C<@ 9 ; C< GB;1 g C<1; . ;A6= A= C<1; AF 1I< 1 @B= ; B= : A C E<I<;A CA@ A6EA = ;<?A;@<@ C< . E1 C A ?<; A @ @1=61><+A; 9; . D<1 ? E<66 1 9 ; . <@ A= C< @199<;< F<= D< E<< C< E = = < . = g E ;=C1GA C< EA= <I<; C<6<== 99< @<@ CA G1 1 = =C B6@

-= 8@ ! ' ! -' ' - ! " ' : !>' ' 8* -' $

D<' GBD61F6 ' G; 9<==<@' 1 ' C1=' >1 ?@ . ' EC1FC' E<;<' ' C1=' E 'Ñ # @' C<' A== B <@' I<;' C<' F =F1< F<=' 9' C1=' =BDK<F =' C<' =A . <' AD= 1B <' AB C ;1 ' EC1FC' C<' D<61<I<@' C<' G ==<==<@' I<;' C<1;' 61I<=' A @' 9 ; B <=' 1=' F;B<6 G<;=<FB 1 =' 9' C<' ;<9 ; . <@' GA; ' E<;<' 1 = 1?A <@' D ' C1=' G;1@<' ;A C<;' CA 'D ' C1=' @<I 1 ' <' CA@' 6 ?' . <@1 A <@' C<' ;B1 ' 9' C<1;' FC ;;FC<=6 A @' B . <; B=' F I<;=1 =' CA@' D<< ' D A1 <@' D ' C;<A =6 I1 6< F<6 ;' D;1D<; ' C<' B CAGG ' +; <= A =' 9 B @' C< . =<6I<=' =BFF<==1I<6 ' @<G;1I<@' 9' A66 C<1;' ;1?C =' A @' A66 C<1;' G;1I16<?<=' C<1;' . 1 1= <;=' E<;<' G; C1D1 <@' 9; . ' E<A;1 ?' C<' <FF6<=1A= 1FA6 CAD1 6 9; . ' A < @1 ?' C<' =1F>6 ;' I1=1 1 ?' C<' G;1= =' C<1;' G; 9<== ;=' E<;<' A66 E<@' ' <AFC' <1 C<;' 6A ?BA?<=6 GC16 = GC 6 ;' C< 6 ? 'Ñ C<1;' =FC 6=' E<;<' D; >< 6 BGÑ' A @' C<' ?19 =' D<= E<@' ' C<' F =1= ;1<=' E<;<' ;A =9<;;<@' ' A C 61F' C =G1 A6=' Ñ FB 1 ?' A @' 9 ;F<' E<;<' < . G6 <@' ' G;<I< ' C< . ' 9; . ' CA I1 ?' C<' D;1 ?1 ?' BG' 9' C<1;' E ' FC16@;<

<9B=<@' A@ . 1==1 ' 'A ' GBD61F' 991F<=6 C< 'CA@' @<I <@' C< . =<6I<=' ' 1 @B= ; 6 EC1FC' E<@' ' C<1;' M<A6 1 =' . =' ;AG1@' @<I<6 G . < ' 6D<; ' G; <F <@' C< . 'Ñ DB ' A ' C1=' @<A C6 BI 1=6 C1=' < I1 B=' ;1IA66 1 ' F F<; ' # C' 1FC<6 <' <661<;6 C1=' 9A C<;' CA F<66 ;' 9' ;A F<6 A #' E1 C' A@A . <' @<' A1 < 6 B;?<@' B1=' : ' ' @<= ; ' C< . ' C<' B . <; B=' D6 E=' A6;<A@ '1 961F <@' BG ' C< . ' D ' C<' - 1 ?' CA@' @<G;1I<@' C< . ' 9' C<' . ZA =' 9' . A>1 ?' A '<99 ; '1 ' C<1;' E '@<9< F<Ñ EC< 6 ' C<' @' F D<;6 * 76 AGG<A;<@' C<' @<F;<<' EC1FC' =BGG;<==<@' C<' @1F ' 9' A <=6 '1 <;@1F <@' C; B?C B ' C<' EC 6<' >1 ?@ . ' C<' <P<;F1=<' 9' C<' <9 ; . <@' ;<61?1 6 ;@<;<@' e ' 1 =' . 1 1= <;=' ' 6<AI<' C<' >1 ?@ . ' E1 C1 ' A' 9 ; 1?C 6 A @' < K 1 <@' GA;< =' A @' B ;=' ' D;1 ?' BG' C<' FC16@;< ' 1 ' 61<1;' FA;<' 1 ' C<' A C 61F' ;<61?1 ' . 1?;A 1 ' ' C<' GA; ' 9' C<' +; <= A =' EA=' G; C1D1 <@' B @<;' GA1 ' 9' C<' ?A66< =' A @' F 0 91=FA 1 ' 9' G; G<; 'Ñ A C 61F' G;<AFC<;=' ;AI<;=<@' C<' E =' G< G6<@' D ' +; <= A =6 A @' 1 ' C<' G6AF<=' EC<;<' C<=<' . 1==1 A;1<=' E<;<' B AD6<' ' <99<F ' F I<;=1 =6 C<" =<FB6A;' A; . ' EA=' FA66<@' 1 ' ' <99<F ' C< . ' D ' 9 ;F<' ;<JB< 6 6 <I< ' D<9 ;<' C<' 1==B<' 9' C1=' @<F;<<6 @;A? =' CA@' D<< ' =< ' ' D= 1 A <' +; <= A =' E1 C' G<; . 1==1 ' 'AF ' EA;@=' C< . ' E1 C' <I<; ' 1 . A?1 AD6<' 61F< F<' B 16 C< ' CA@' D<F . <' F I<; <@' ' B . <;AD6<' hA @' A ; F1 B=' AF =' 9' I1 6< F<' E<;<' F . . 1 <@' A?A1 =' C< . 6 C =<' EC ' ;<=1= <@' D<1 ?' F @< . <@' ' C<' ?1DD<' ;' C<' ?A66 E=' Ñ EC16=' C<1;' . 1 1= <;=' E<;<' D; >< ' A61I<' ' CB @;<@' C B=A @' 1 @B= ;1 B=' 9A . 161<=' <=FAG<@' 9; . ' ;A F<' Ñ A @' C<' 9 ;<1? ' A 1 =' EC1FC' ;<F<1I<@' C< . ' E1 C

G< ' A; . =' D<FA . <' < ;1FD<@' D ' C<1;' 1 @B= ; ' A ' C<' <PG< =<' 9' C<1;' A 1I<' F B ; ' C1=' @1 B=' @<F;<<' 1 < =191<@' C<' CA ;<@' 9' C<' +; 0 <= A =' 9 ;' C<1;' - 1 ?((A @' 1 F;<A=<@' C<1;' ;<= B;F<=' A @' C<1;' = ;< ? C((EC16=' 1 ' < 9<<D6<@' C =<' 9' C<' '>1 ?@ .'N 9 ;' C<;<' ;I<;<' 9 ; . <@' . A ' ;<?1 . W =' 9' ;< FC' ;<911?<<=' EC ' 1 961F <@' . ;<' CA ' <' =<I<;<' D6 E' ' C<' G<;=<FB 1 ?' A;FC

C<' F @BF ' 9' C1=' +;1 F<' 1 ' ;<=G<F ' ' = ;A ?<;=' EA=' <1 C<;' . ;<' KB=' ;' . ;<' G;B@< ' <' CA@' 9 B @' 1 ' . <@A6=' E611FC' C<' C B?C ' 1 =B6 1 ?' A' =B991F1< ' . 1I<' 9 ;' B;?1 ?' EA;' A?A1 =' 66A @N A @' < ' C<' G<; . 1 <@' A;=CA6' 6A' <B166A@<' ' <;<F ' ' C<' +6AF<' @<=' 1F 1;<=((1 ' +A;1=((A' . B . < ((C' EC1FC' A' 61?C ' DB; ' D<9 ;<' C1=' = A B<((A ' C<' 9 ' 9' EC1FC' A66' C<' A 1 =' 9' . G<' E<;<' ;<G;<=< <@' A=' IA JB1=C<@' A @' < FCA1 <@' <' . A1 A1 <@' A ' + . <((1 ' =G1 <' 9' C<' + G<((A' ;1?C ' 9' A= 6B . ' 9 ;' A66' C<' IA?AD @=' ;' . A6<9AF ;=' EC ' = B?C ' G; <F 1 ' A ' C<' ;< FC' . DA== N' A6 C B?C' C<' C<;' G E<;=' G ==<==<@' 9' C<' =A . <' G;1I16<?<' CA@' ;< B F<@' = ' =FA @A6 B=' A' ;1?C ' + ;<==<@' D ' C<' . . F1 ' ' 9 66 E' C<' <PA . G6<' 9' C<' 6A <;' ' C1=' G 1 ((B1=' : ' CAB?C 16 ' ;<G61<@((CA ' [' <' <I<;' 9 66 E<@' A ' <3=' <PA . G6<((0 @' CAI1 ?((' C<' F ;A; ((AGG 1 <@' @ .' ' D<' A ' <PA . G6<' ' C<;=(`' 1=' A . DA==A@ ;' EA=' <PF . . B 1FA <@' D ' + G<' . F< ' : ((EC ((A ' C<' =A . <' 1 . <((;<9B=<@' ' . 1 A <' ' C<' 6<F ;A <' 9' 6 ? <((A;@1 A6 B;= < . D<;?((61<' FA @1@A <' G; <F <@' D ' C<' ;< FC' A;FC'N BG ' EC1FC' I1? ((A ' A F1< ' G ==<==1 ' 9' C<' + G<=((EA=' A ' F<' =<1M<@' B1=' : ' D<61<I<@' CA ' C<' A <@' 9 ;' C1=' 969< F<=' A?A1 =' C<' . ' 9' . <' D ' C<' ;1? B;' E1 C' EC1FC' C<' ;<A <@' C<' A6I1 1= =' N DB ' C1=' ;<F< ' B=B;GA0 1 =((. A1 A1 <@' E1 C' = ' . BFC' A;; ?A F<((@1=?B= <@' A ' B; G<' C<' +;1 F<' 9' ;A ?<((A?A1 =' EC =<' F =< ' C<' G<AF<' 9' 1 . <?B< ' CA@' D<< ' F F6B@<@((CA@' D<F . <' C<' = B6 9' A' <E' 6<A?B<((EC1FC' >' C<' A . <' 9' C<' <A?B<' 9' B?=D B;?((9; .' C<' A . <' 9' C<' F1 ' 1 ' EC1FC' 1 ' EA=' A?;<<@' BG ' C<' . G<; ;((61<' . G1;<((GA1 ((66A @((A @' AI ((9 ; . <@' A' F A61 1 ' A?A1 =' ;A F<'N A @' B1= =< ' A' 6A;?<' A; . ' 1 ' O<; . A ' B @<;' C<' ;@<;=' 9' C<' @?B+C' B>#$<$B+ @>33DB' B3' B?= JBD7 >7 %ABGC1 ' [' = (`' =A1@' C<' - 1 ?' ' C1 . (( ' C1=' 5@<GA; B;<(( [ 1 ' =< @1 ?' B' ' F . . A @' . ' A; . 1<=(( ' A99 ;@' B' A ' GG ; B 1 ' 9' . A>1 ?' B;' . <;1 =' > I ' O (( A @' = ' AF ' 1 ' C<' 9AF<' 9' B; G<' CA ' E61< ' ' A . ' ' . ;<' 1 ' =CA66' ' G<;F<1I<' CA ' C<' - 1 ?' 1=' @<A@(`

6<== 1 1= ^) $*$7 7<7 2 4 , + & !

C< . =<6I<= E<;< G; 9A <@&A @ C< A=C<= 9 C< @<A@'?1I< C< E1 @= O<; . A D . 3= 1 A F; 9 C ; ; ;& A @ A F< =< 1 C< 91<6@ C;<< 6A;?< A; . 1<=& C< F . . A @ 9 EC1FC EA= < ;B= <@ C< %B>< 9 ; ;A1 <& CA;6<= & A = I<;<1? E1 C B A >1 ?@ . & DB < @ E<@ E1 C ?;<A A6< =& C< +;1 F< 9 A6@<F>& A @ C< BP # ;?&1 6<F ; 9 (;A @< D B;? CA;6<= ;< > (A @ A < F<& @; I< A;=CA6 %B;A= DAF> 1 ;A F<& A @ @1<@ 1 C< . 1@= 9 C1= =BFF<==<= A6@<F> IA JB1=C<@ A;=CA6 @3 B . 1];<= 1 6A @<;= BP< . D B;? EA= C< AGG 1 <@ C< F . . A @ 9 C< ?;A @ A; . 9 C< ; CM A @ C1= ?;<A ?< <;A6& EC & D C1= 91<; ?< 1B= A @ >< A @ ;AG1@ KB@? . < & ;<FA66<@ C< . < . ; 9 C< O;<A @W& EC =< GBG16 C< IA=& KB= 191<@ C< - 1 ?3= FC 1F< 1 C< . = D;1661A . A <;

E ; FC A; . 1<= G; <F <@ C< ; C<; 9; 1<; BP< . D B;? E1 C < FFBG1<@ A G ; 1 9 C< IA66< 9 A . D;<M EC16= C< 61<;& B @<; A;=CA61@3 B . 1];<=& G; <F <@ 61A 9 C< =<66<; C< +;1 F< 9 A6@<F>& A C< C<A@ 9=BG<;1 ;9 ;F<= C< A . D;<& <A; 6<B;B=& C<6@ BP< . D B;?1 FC<F>& A @ AEA1 <@ C< A; ;1IA6 9 C< 6<F ; 9 (;A 0 @< D B;? A AF> A @ @<= ; D C A; . 1<= BP< . D B;? @1I1 <@ C1= G6A & A @ G;<I< <@ 1 ; < ? C< <@ D A ;<1 9 ;F< . < & =<F;< 6 @##A#I 9; . C< A; . 9 C< =<66<& C< =B@@< 6 99<;<@ DA 6< 61< +;1 F<& & A @ C< . A;FC1 ? G< 6 E1 C A 9; 9 <JBA6 <P < C A 9 C< O<; . A =& C< ;A =9<; ;<@ C< E'C 6< 9 C1= FAIA6; C1= E1 ?=& CW 96A > 9 C< < . & 9; . EC . C1= . A <BI;< EA= F F<A6<@ D A =61?C < . 1 < F< A6@<F>& A AF><@ 1 9; A @ 1 96A >& A= 1=C<@ A 91 @1 ?C1 . =<69 B 96A ><@ D A A ;A; . EC1FC C< =BGG =<@ D< 1 9<;1 ; 1 B . D<; C1= I M A @ C< @1= ;@<;& FFA=1 <@ D C< =B@@< <== 9 C< A AF> D<FA . < A ; B 1P C B=A @ =6A1 & A @ <6<I< C B=A @ G;1= <;=& E<;< C< ;<=B6 9 C1= I1F ; & EC1FC =<< . <@ D< A @<F1=1I< <& DB EC1FC& <I<; C<6<==& CA@ @<F1=1I< ;<=B6 C< ;< . A1 = 9 C< IA JB1=C<@ A; . K 1 <@ A (;B==<6= C< A; . 9 C< 6<F ;M EC16= BI 1=& K<A6 B= 9 C< I1F ;& @<G;1I<@ C1 . 9 A G ; 1 9 C1= ; G= C< < < . EA= CB= < AD6<@ ;<?A1 C1= =BG;< . AF M A @ BP< . D B;? EA= ;<@BF<@ AF 1 ? C< @<9< =1I<

A 1 A E ?A1 <@ 1 +1<@ . C< DA 6< 9 A99A;@< A?A1 = 1F ; . F@F<& %B>< 9 AI & EC =< A <= E<;< 6 =M 9 ; ;A F< A= = A=

611 . ' C1=' 166B= ;1 I A6 - 1 ?' 1661A . EC ' CA@' ;< B; <@' ' F . . A @' C1=' A; . ' 1 ' 6A @<;=' A9 <;' CA I1 ?' =<FB;<6 '91P<@' C<' F; E ' 9' ?6A @' ' C1=' C<A@

C<' - 1 ?' 1 ' G<;= ' >' C<' 1 . G ; A ' 9 ; ;<=='9' A . B;' EC16= ' BP< . D . ;?' ' C<' DA >=' 9' C<' WCA1? <' F I<;<@' C<' 1< <=' 9 =1<?<' A @' C<6@' C<' 9 ;F<=' 9' 1661A . ' 1 ' FC<F>' 9 <;' C1=' <PG6 1 ' B1=' : ' JB1 <@' C<' A; . ' A @' ;<=1? <@' C<' 5F . . A @' A' BP< . D B;?' EC ' F I<;<@' C1 . =<69' E1 C' ?6 ; ' A ' C<' DA 6<' 9' <1 ><;JB<' ' =G ' CA I1 ?' D<< ' @1=F I<;<@' 1 ' 1661A . 3=' FA . G' C<' EA=' 9 ;F<@' ' E;1 <' A' 9A6=<' @<=GA FC' ' A;=CA6' BP< . D B;?' A @' C<' 6A <;' 1 . . <@1A <6 ' >' . <A=B;<=' EC1FC' G6AF<@' C1 . ' 1 ' G<;16 ' 1=' A; . ' A6 . = ' DB;1<@' 1 ' =6B . D<;' EAA' A AF><@' A ' C<' D;<A>' 9' @A ' A @' <' D;1?A@<' EA=' GB ' ' 961?C ' ' BP< . D B;?' EA=' 166' DB ' @A ?<;' ;<I1I<@' @=' = ;< ? CN' A @&';AG1@6 ' FCA ?1 ?' C1=' ?; 1 . @' C<' C;<<' 1 . <=' ;A661<@' C1=' 9 ;F<=' A @' FCA;?<@' A ' C<1;' C<A@' A ' G;1 F<=' 9' C<' D6 @' @1= 1 0 ?B1=C<@' C< . =<6I<=' ' C1=' FFA=1 ' +C161GG<' %B><' 9' ;6<A =' C< ' C<' %B><' @<' CA; ;<=' A @' A9 <;EA;@=' <?< ' 9' C<' >1 ?@ . ' EA=' 9 ;< . = ' A . ?= ' C<' 9 ;< . = ' FA;F<6 ' 919 << ' <A;=' 9' A?<' C<' FCA;?<@' A ' C<' C<A@' 9' C<' B=<C 6@' (;1?A@<' EA=' E B @<@' A @' ;< B; <@' ' C<' FCA;?<' 1 ' =G1 <' 9' C1=' E B @' '6< ? C' - 1 ?' 1661A . 3=' ?61=C' OBA;@=' ?A I<' EA 'N A @' (B996<;=' F . 1 ?' BG' E1 C' C1=' FA IA6; ' F . G6< <@' C<' I1F ; ' 1661A . ' C E<I<;' ;< 1;<@' 1 ' ? @' ;@<;' A @' F 1 B<@' C<' FA . GA1? 'N C1=' ?< 1B=' 9B66' 9' ;<= . ;F<=' < AD61 ?' C1 . ' ' @<;1I<' ?;<A <;' A@IA A?<=' 9; . ' A' @<9<A ' CA ' C<' ;< FC' 91;<JB< 6 ' D A1 <@' 91PK . ' A' I1F ; ' ' C<' 9 66 1I1 ?' <A;' a *!8b' A ' <;E1 @<' BP< . D B;?' A?A1 ' D . <@' A' =1? A6' I1F ; ' I<;' C1=' G;1 F<' DB ' A?A1 ' 9A16<@' ' @<;1I<' A 'GA; 1FB6A;' A@IA 0 A?<' 9; . ' 1 ' 1661A . ' F<' . ;<' . A@<' A ' A@ . 1;AD6<' ;< ;<A ' A @' B1=' : ' EC ' CA@' 9 ; . <;6 ' . A@<' = ' . A ' D JB<= ' A6 . = ' E1 C B ' 91?C 1 ?' F B6@' E' =FA;F<6 ' AFC1<I<' C<' F JB<=' 9' 6A @<;=' A9 <;' = ' . A ' D6 @ ' I1F ;1<=' A 1 A ' 6<==' =BFF<==9B6' CN . ' BP< . D B;?' EA=' I1F ;1 B=' 1 ' +1<@ . ' (B ' A66' C<=<' ?6 ;1 B=' =BFF<==<=' E<;<' F B 0 <;DA6A F<@' D ' C<' @1=A= ; B=' 1 IA=1 ' . A@<' D ' 1F ;' A 6<' 9 . W@W<' 1 ' +; I< F<' A @' C<' 9A A6 DA 6<' 9' A' ?B<' 1 ' EC1FC' B; I166<' 1 ' D<@1< F<' ' C<' - 1 ?3=' @1= 1 F ' ;@<;=' A AF><@' @ . 1;A6' B==<66' E1 C' A' 9 ;F<1 9<;1 ;' D ' < CA69' ' CA ' 9' C<' ?61=C ' 9 <;' . A>1 ?' C<' . = ' C<; 1F' <99 ; =' C1=' =C1G=' E<;<' @1=G<;=<@' ;' =B >' A @' B==<66' DB; ' C1; << ' 9' C< . ' 1 ' C<' @<9< F<6<==' G ; =' 9' A' ?B<' A @' C<;D B;?

E #61' ;< . A1 <@' 1 ' C<' CA @=' 9' ;A F<' 1 A66 &' C<' %B FC' ;<= ;<@' + @1FC<; ; &' A @' =1? <@' A ' A@IA A?< B=' ;<A ' E1 C' ;A F<&' EC1FC' ><G 'C<;' F 6 1<=' A @' G;<=<; I<@' C<;' G ==<==1 =' A ' A1 '% . 1 ?

C<' G E<;' 9' B1=' : ' EA=' = ' =CA>< 'D ' C1=' 6 ?' A @' D6 @ 'EA;' CA ' C<' F B6@' ' 6 ?<;' =BGG ; ' 1 ' + 6A @' C1=' ;<6A 1 ' +;1 F<' @<' 1&' EC CA@' D<< ' <6<F <@' - 1 ?' 9' CA ' >1 ?@ .' 1 ' GG =1 1 ' ' B?B= B=&' C<' 6<F ;' 9' AP ' B; G<' E' A ' 6< ? C' < K <@' A' G<;1 @' 9';<G =<' C<' DA 6<' 9' $< A&' ?A1 <@' D ' +;1 F<' B?< <' A ' C<' C<A@' 9' C<' . G<;1A6' ; G=' I<;' C<' . '>=' A @' C<' 0;A @' 1M@<;' 1 ' G<;= &' EA=' 9 66 E<@' D ' C<' G<AF<' 9' A;6 E1 M&' EC1FC' EA=' CB . 161A 1 ?' 9 ;' B;>< ' 1< ' C<;<' 9 66 E<@' E ' <A;=' 9' ?< <;A6' ;A JB1661 '9 ;' B; G<' C<' - 1 ?' 9' E<@< &' CA;6<=' : &' A @' +< <;' &' MA;' 9' B==1A&' E<;<' C<' 91;=' 'D;<A>' 1 ' 1 ' C<' ; C'N A @' C<' B C' = ' =C E<@' =1? =' 9'F . 1 ?' ; BD6<=

CA;6<=' &' - 1 ?' 9' GA1 &' 6A ?B1=C<@' 1 ' <PG<F A 1 ' 9' AGG; AFC1 ?' @<A C' <' CA@' ' FC16@;< &' A @' C<' - 1 ?=' 9' ;A F<&' E .'B3' M>7#@A' ?6A @&' A @' C<' . G<; ;' < G 6@&' F I< 1 ?' C1=' IA= ' @ . A1 =&' CA@' < <;<@' 1 ' A' =<F;<' A?;<< . < ' ' @1I1@<' C< . N' EC< ' CA;6<=&' D ' A' E166' . A@<' 1 ' *! &' AGG 1 <@' A=' C1=' C<1;' C<' 6<F ;A6' +;1 F<' 9' (AIA;1A&' 61< '=1P' <A;=' 9'A?<&' EC ' @1<@' 1 ' C<' 9 66 E1 ?' <A;' C<' @ 1 ?' A;FC&' A9 <;' 6 ?' =B6 1 ?' C<' + G<&' C<' 1I<;=1 1<=' 9' GA1 &' A @' C1=' 1I ' B F16&' C< ' . 1 A <@' A=' C1=' =BFF<== ;' +C161G&' %B><' 9' K B&' ?;A @= ' 9' C1=' <6@<= '=1= <;&' A;1A C<;<=A&' A @' =<F @' ' 9' C<' %ABGC1 ' 9' ;A F<' 9'+C161G'=C B6@' @<F61 <' ';< B F<' C1=' <I< BA6' ;1?C =' ' C<' C; <' 9' ;A F<&' C< ' C<' %B><' @<' (<; ; &' C1=' B ?<;' D; C<;&' EA=' =BD= 1 B <@' 9 ;' C1 . &' A @&' 1 ' C<' <P ' G6AF<&' 61<' ;FC@B><' CA;6<=&' C<' . G<; ;3=' =<F @' = ' ' ' FA=<' @1@' 61<' <= A ;' G<; . 1 ' C<' @1= . < . D<; . < ' ' C<' GA 1=C' . A;FC ' <' @1<@' 1 ' 2""

B1=' : ' > <E' CA ' ' AFF<G ' ' C1=' <= A . < ' EA=' ' D;<A>' C<' A?;<< . < ' EC1FC' C<' CA@' G;<I1 B=6 ' =1? <@&' A @' ' <PG =<' ;A F<' ' A' <E' EA;' E1 C' B; G<&' EC1FC' EA=' A6EA =' ;<A@ ' ' ;<G; AFC' C1 .' E1 C' A=G1;1 ?' A9 <;' B 1I<;=A6' . A;FC ' <' F B6@' ' ;<=1= &' C E<I<;&' C1=' @<=1;<' ' G6AF<' = ' 'D;1661A ' A' F; E ' ' C<' C<A@' 9' C1=' ?1 A @= 'N AC@' C<;<9 ;<&' A9 <;' = .' C<=1 A 1 &' C<' AFF<G <@' C<' E166&' ;<F ? 1=<@' C<' %B><' 9' K B'A=' A' - 1 ?' . @<;' C<' 1 6<' 9' +C161G' &' A @' =< ' CB ' ' GA1 ' E1 C' C<' . < . ;AD6<' E ;@= (# ' ' ' ' ' . !

CA . 166 P ✗ B > E ' ' C< A; . 1<=✗ EC1FC C< CA@ <I<;' =<< ✗ < ' 9<<D6<@ C< . 161 A; ' @1=F1G61 <✗ = ' ;1?1@6 ' . A1 A1 <@ D ' BI 1=✗ D ' D61 @6 'A @ G; @1?A66 '=FA <;1 ?@1? 1 1<=A @ ;<EA;@=' '?;<A ' B . D<;' 9 1 . ?' ?< 6< . < 'G11;FCA=<@ ;<?1 . < =EC< ' C< 'E<;< = 166 . <;<D =N A @ C< F; ==' 9 ' B1=✗ A' ;<EA;@ @<I1=<@ D ' C< - 1 ?' 1 ' *!8✗ EA=' = 6@ A ' A' I<; ' 6 E' G;1F< A ' C< A;' 991F<' C< B . D<;' 9 991F<;=' A @ = 6@1<;=' 1 ' C< IA;1 B=' F ;G=' F<A=<@ 'D< BG ' C< = A @A;@N & C< G; 0 I1=1 =✗ FA;<6<==6 ' 1 =G<F <@✗ F<A=<@ ' D< 9 ? @ JBA61 'N A @ C<=< 9AB6 =✗ F . . 1 <@ A=' C< ' E<;< 1 ' C< 9AF< 9 C< ?;<A <= ' ?< <;A6=' EC1FC B; G< CA@ < ' GG =<@ ' C< 9 ; ; . <=' 9 B1=' : ✗ A99 ;@<@ ?; 1 . @=' 9 ;' C< . yE' ?6 . ' A 1F1GA 1 =' C< - 1 ?✗ C E<I<;✗ . A@< G; @1?1 11=' <99 ; =)' C< G; . G 6 ' ;<F;B1 <@ C1=' A; . 1<=✗ A @ ;<GA1;<@ C< 6 ==<=' =B99<;<@ D ✗C1=' AI 'N EC16=' . A ' 166B=0 ;1 B=✗F . . A @<;=✗ =BFC A=' A 1 A ✗ 166A;=✗ ' (<;E1F>✗ A @ < @V . <✗ =C E<@ C< . =<6I<=' ' D< E ; C ' =BFF<== ;=' 9 B;< <✗ @W✗ A @ BP< . D B;?' C1=' @1=A= ; B=' EA;✗ F . . < F<@ 1 ' A6 ✗ =G<<@16 ' <P0 < @<@ 1 =<69 ' C< E ' 1 < =✗ ' C< 1=6<=✗ A @ 6 ' <I<; ' G 1 ✗ 1 ' 9AF ✗ A ' EC1FC C< ;< FC A @ GA 1A;@=' CA@ <= AD61=C . < =' ' 6A= <@ <6<I< ' <A;=✗ E1 C F 1 BA6 A6 <; A 1 =' 9 =BFF<==<=' A @ ;<0 I<;=<=

= 161 1<=' 91;=' F . . < F<@ 1 '✗ . DA;@ ✗ EC<;< +;1 F< B?< <' F . 0 . A @<@ C< . G<;1A6 A; . ' 9 9 ; ' C B=A @ . < ' C< B 9 ; A< %B><' 9 AI ✗ ?< <;A61==1 . ' 9 C< ;< FC ; G=✗ EA=' [GG =<@ ' C1 . ✗ A @ CA@ A=' C1=' =<F @=' 1 ' F . . A @ C< 166B= ;1 B=' A 1 A ' A @ 166<; 1✗ C< 6A <;' 9 EC . ' EA=' A' F B; 1<;' ;A C<;' CA ' A' ?< <;A6✗ A @ A' 9AI B;1 < 9 B1=' : ' C< @<9<A ' 9 C< ;< FC A ' C1A;1✗ ' C< ?61 ✗ EA=' C< 91;=' <I< ' 9 C1=' EA;✗ A @ EA=' FAB=<@ D ' C< 1 . G;B@< F< 9 166<; 1✗ EC ' ;A=C6 ' ?AI< ;@<;=' 9 ;' C< A AF>' 9 1 . G;<? AD6< 1 ;< @1 . < =✗ EC< ' =BFF<==' 1 =<69 F B6@ CAI< CA@ ' @<F1@<@6 ' A@IA A?< B=' ;<=B6 =' A 1 A ' GAB=<@ B 16 C< ;@<;' 9 ;' C< A AF>' CA@ D<< ' C;<< 1 . <=' ;<G<A <@N A @ C< ' C< =A1@ ' C< 991F<;=' B @<;' C1=' F . . A @)' #R < ' P1=' ? ✗ ?< 6< . < Z E< . B=' D< ~ C< ; G=' ;B=C<@ ' C< 1 ;< FC . < =✗ A @ A' . B6 1 B@< 9 . < ' G<;1=C<@ B=<6<==6 ' 1 ' C1=' ;A=C A AF>' A 1 A ' EA=' E B @<@N DB ' =<<1 ?' CA ' C< = 6@1<;=' E<;< @1=C<A; < <@✗ A @ 166<; 1 C ; B?C6 ' @1=F B;A?<@✗ C< @1;<F <@ A' ;< ;<A ✗ A @ 6<@ C< ;< FC AF; ==' C< @@A' 1 <;' =<GA0 ;A <@ C< E ' A; . 1<=

A @ 61 ;< FC ; G= C<A;1 ?1 > '961?C 166A;= ;A 61; ?C C<5 ;A >= <PF . 1 ?[C< I1F ; 1= B;= 1 6< ? C 1 ;A66 1 ? C< I1F ;= ?A66A FAIA6; FCA;?< F . G6< <@ C< I1F ; N A @ 166A;= EA= =A61 <@ D C1= = 6@1<;= A= A;=CA6 9 ;A F< C< 91<6@ 9DA 6< C< - 1 ? AEA;@<@ C1 . C1= C1?C ;<F . G< =< EC1FC 166A;= KB= 191<@ A <E D C< I1F ; 9 % AE<; C AIC1FC C< ?A1 <@ I<; C< . G<;1A61= = 1 C< G6A1 = 9 FC= < 1 F F<; E1 C C< 6<F ;' 9 (AIA;1A A66AP@ EA= A6 . = A C< =A . < 1 . < I1F ;1 B= A G1;DAFC N A @ C< ; A@ 1< A AGG<A;<@ G< C< ;< FC DB C<;< C<1;' =BFF<==<= F<A=<@

C< %B>W 9 AI ADA @ <@ ;A F< A @ =BGG ; <@ A?A1 = +C161G A @ C] %B>< 9 (B;?1 . @ C1= E = = 1 6AE C< FAB=< 9 C< . G<; ; 166A;= =<< . <@ D< AFF 1 . 9 C1= ?< 1B= C< 91 <= . A D< A C< C<A@ 9 C<"A; . 1<= DB C< EA 9 F F ;@ D< E<< C1 . A @ C< 6<F ;' 9 (AIA;1A EC =< ; G= E<;< B 1 <@ E1 C C1= E FFA=1 <@ C1= ;<FA66 C< 1 . @< A;=1 =BFF<<@<@ C1 . A @ 1 A;= EA= =< GB @ E C< +; <= A = EC CA@ 96<@ C< <I< <=A @ EC CA@ D<< @;1I< < ;<I 6 D @<=GA1; + ; B?A6 C< D; >< 1 =A661A F< E1 C ;A F< 9 ;' C< GB;G =< 9 9 ; . 1 ? < ;1 C ?6A @ A @ 9; . C1= G<;1 @ @A <= 61< 9A . B= ;<A 9 F . . <;F< < <;<@ 1 D< E<< C< E A 1 =D EC1FC C< E1 <= 9 C< < A @ C< E 6 9 C< C<;' E<;< @<F6A;<@ D< 9;<<6 <PFCA ?<AD6W C< . A ;<I<;=<= ;A F< CA@ E =B99<;<@ E<;< =G<<@ 9 66 E<@ D A = 1 . ;< <; ;1D6< FC<F> A;=CA6 A66A;@ CA@ 6<@ A A; . 1 0<; . A A @ CA@ <91<F <@ A KB F 1 E1 C C< 6<F ;' 9 (AIA;1A A @ B @< A;=1 C< C;<< F . . A @<;= 9 ; . @ C< . =<6I<= A FC= < 1 C< G;<=< F< 9 C< < < . 3= A; . B @<;' B?< < A @ A;6D ; B?C A @ . B D<;1 ?A= @1@ C<1;' E AD B <1?C C B=A @ . < C< DA 6< D< E<< C< . > G6AF< A6 . = C< A 1I<;=A; 9 C A EC1FC 166A;= CA@ ?A1 <@ A C< =A . < G6AF< 1 C< G;<F<@1 ? <A;' N DB C1= 1 . < C< <I< EA= ;Y FC=<#YY## 9A A6 ;A F< A66A;@ 9<66 1 C< CA @= 9 C< < < . A @ ;< . A1 <@ C<1;' G;1= <; C< 6<F ;' A @ B @< A;=1 1 . . <@1A <6 ;@<;<@ A ;< ;<A FA;<6<==6 6<A I1 ? D<C1 @ C< . 1 C< I166A?< 9 (6< C<1 . A F =1@<;AD6< D @ 9 1 9A ; A @ 9 B;' ;<?1 . < = 9 FAIA6; EC E<;< F . G<66<@ 6A @ E C<1;' A; . = C< ;< ;<A = D<FA . < A 9;1?C 9B6 ; B C1= B 9 ; B A < DA 6< F = C< ;< FC 919 C B=A @ . < A @ A CB @;<@ 6<A?B<= 9

[

6<== 1 1= ^) ! ' ' ! !

C< ;F61@B><' CA;6<=' EA=' G; F6A1 . <@' - 1 ?' 9' GA1 ' 1 ' (A;F<6 A < @V . <&' 1 ' +1<@ . &'I1F ;1 NB=' I<;' B?< <' A ' C< D;1@?<' 9' A==A ' ' C<' @@A&' A6 <' 1 <;;BG <@' C<' $?<B7K'B3' @+0 Cm;@'+< QAA>+B ;;< ' 9' . 1=9 ; B <' EC1FC' E'=E<G ' I<;' B1=' : ' A @'+C161G'

C<' <A;' 2"*' EA=' = 166' . ;<' 9A A6' ' C<=<' E ' . A;FC=&' A6 C B?C' FA . GA1? ' G< <@'1 ' C<' ; C' A @' B C' B @<;' C<' . = '9AI B;AD6<' AB=G1F<=' < @V . <' CAI1 ?' ?A1 <@&'1 ' C<' AD=< F<' 9' B?< <&' C<' I1F ; ' 9' A6F1 A ' I<;' C<' . G<;1A6=&' . A;FC<@'BG ' B;1 &' C<' 6 '1 . G ; A ' G6AF<' EC1FC' ;< . A1 <@'1 ' C<' CA @=' 9' C<' %B><' 9' AI ' 166A;='@; I<' D<9 ;<' C1 . ' C<' %B><' 9' (A@< 'A='9A;' A=' C<' O<; . A '9; 1<;&' A @' 166<; 1' 1 ' 6A @<;=&' A ' C<' C<A@' 9' <1?C ' C B=A @' . < &' 96A <;<@' C1 . =<69' CA 'C<' E B6@'D<' AD6<' 'E1G<'GB ' C<' . < . ; ' 9'C1='9 ; . <;';<I<;=<='N DB 'B 9 ; B0 A <6 ' C<=<' ;<I<;=<=' CA@' '@1 . 1 1=C<@'C1=' =<69 F 91@< F<&' A @' C1=' GG < ' EA=' A;6D ; B?C ' 166<; 1' CA@' < ' FA . G<@' C1='A; . ' <A;' C]' <CA1 <&'A ' A . 161<=&'1 'A 'B 9A0 I B;AD6<' G =1 1 &' A @' EA=';<= 6I<@' ';1=>' A' DA 6<' 1 ' =G1 <' 9' C<' ;<0 . = ;A F<=' 9'C1=' ?< <;A6=' C]' . A <;' 1 'EC1FC' C<' G = <@' C1=' ; G=' EA=' 9A A6&' 9 ;' C<' G6AF<@' 1 'C1='F< ;<' C<' ;AE'A @'1 '@1=F1G61 <@' ; G=&' A @' G = <@' C1='6<9 'D<C1 @' A '1 . GA==AD6<' . ;A==' A;6D ; B?C' G<;F<1I<@' C1=' <;; ;&' A @'1 . . <@1A <6 'FA;;1<@' C1=' ;1?C &' EC1FC' EA='1 ' '@A ?<;' 9' D<1 ?' A AF><@&' ' - A . 161<=&' ' I<;EC<6 .' C<' F< ;<' 9' C<' ;< FC' A; . ' ;I1 C' =BG<;1 ;' 9 ;F<=' 1<B < A O< <;A6' OA==1 ' < ;<A <@' 166<; 1' ' FCA ?<' C1=' ;@<;' 9' DA 6<'N DB ' C<' 6A <;' D= 1 A <6 ' ';<9B=<@&' A @' A;60 D ; B?C' =G<<@16 ' 9 ;F<@' C1='61 <=' C<' 6 ==' ' C<' @@<' 9' C<' ;< FC' EA=' 9;1?C 9B6N' E< ' C B=A @' E<;<' =6A1 ' ;' A><' ' G;1= <;=' C<' EC 6<' 9' GA 1=C' 6A @<;=' EA=' 6 = N' A;6D ; B?C' < <;<@' (;B==<6=' 1 ' ;1B . GC&' A @' < 1 '=B;;< @<;<@' ['A;=CA6&'`' =A1@' B1=' : &' ' C<' IA JB1=C<@' A;=CA6&' ['A ' B;'A?<' E<' FA '<PG<F ' 'D<' 9 ; B A < Q' C<' 1 ?' E' ;A =9<;;<@' < @V . <' 9; .' A6 ' ' 6A @<;=&' A=' C<' 6 ' . A 'FAGAD6<' 9' . A1 A1 1 ?' A ' <JBA6' = ;B??6<' jI1 C' A;6D ; B?C&' A @' C1=' . <A=B;<&' D '@<G;1I1 ?' C<' A; . ' 9' C<' B C' 9'A' ? @' ?< <;A6&' EA=' C<' FAB=<' 9' A' <E' A @' <;;1D6<' @1=A= <;' B?< <' CA@' A6;<A@ ' F; ==<@' C<'+ &' 1 ' =G1 <' 9' C<' ;< FC' A; . ' EC1FC' F6 =<@'A?A1 = 'C1 .' C<' ; A@' ' B;1 &' A @' C<' . A;FC<@' ' C<' A==1= A F<' 9' C1='G6AF<' EC1FC' A' <B166A@<' EA=' D<=1<?1 ?' E1 C' A' F =1@<;AD6<' D @ ' 9' ; G=' A @' A . G6<' A; 166<; ' B?< <' <99<F <@' A ' = 1' C1='KB F 1 ' E1 C' C<' %B><' 9' AI ' A;=CA6

C< A; . ' 9' 6A @<;=& . @<;' C< ;@<;=' 9' C< %B>< 9' < @V . <& & A . 1 . 1 ?' ' A' CB @;<@' C B=A @' . < & EA=' C< 6A=' C G< 9' ;A F<' B1=' : ' AGG 1 <@' C1=' ?;A @= & C]' %B>< 9' (B;?B @ & ' F . . A @' 1 ' K 1 6 ' E1 C' < @V . <' ' X . 9 ; 1 . A < . 1=1 . @<;= A @' 1 ?' @1I1@<@' C< E ' ?< <;A6=& A @' C< ;<=B6 ' EA=' C< @<9<A ' A;@<' A>1 ?' 9' B@< A;@< A @' C< FAG A;< 9' 6<& 1 ' =G1 < 9' C< ?A60 6A ' @<9< F< . A@<" D ' (B996<;=' C< A; . & G; 9 B @6 ' @1=F B;A?<@& A66 E<@' C< < < . ' ' A>< 0C< 'A @' (;B?<=& A @' A66' 1 =' . 161 A; ' G = =' 1 ' =BFF<==1 ' C< ; A@' ' +A;1=' EA=' E' B G; <F <@& A @' A' %B FC' F ;G=& A@IA F1 ?' A=' 911;' A=' <;=A166<=& >' G;1= <;' ' C< D;1@?< 9']I;<=' C< -1 ?3=' . A= <;' 9' C< C ;=<& EC . ' 1 ' . 1= >' 9 ;' C< %ABGC1 C< EA;' CA@' <PCAB= <@' A66' C< ;<= B;F<=' 9' +;A F<' ;<@1 ' EA=' @<0 = ; <@N' C< GBD61F' @<D ' A . B <@' ' A ' . 1661A;@=N' C<;< E<;< 91I< C1 . @;<@' . 1661 =' 9' @ ' /-# ! 61< A BA6' <PG< =<=' ;< ' %& ;<(4& ' JB1;1 ?' E ' CB @;<@& A @' C< ;<I< B< 6 ' D;1 ?1 ?' 1 ' A' CB @;<@' A @' E< ' %<= . A;< =& C< =BFF<== ;' 9' CA . 166A; ' A=' . G0 ; 66<; 0< <;A6& 1 'IA1 'CA@';<F B;=< 'A 1F1GA 1 =' 9';<I< B<& '6 A =& ' 1 <=& A @' 'A '1 F . < AP' 9' < ' G<;' F< & '=BGG6 ' C< 1 . . < =< @<91F1 ' 1 ' 61< ;<I< B<' ' _ <; A1 ' . <;FCA =' D; B?C ' 9; .' +<;B' 611; ' . 1661 =& EC1F61' 61< ' 6< ' ' C< - 1 ?' A ' < ' G<;' F< & DB ' C< A==1= A F< >A' 9' ' AI; 6N3 A @' 61< =<I<;< E1 <;' 9' 2"!' FA;;1<@' C< ?< <;A6' . 1=<; ' '1 =' ?;<A <= ' @<G C ' B1=' : ' A @' C< ?;<A ' D6<=' =< ' 61<1;' G6A < ' C< . 1 ' A '166B= ;1 B=' 9A . 161<=' A ' <;=A166<=' <A ' C1 ?' DB ' A < 'D;<A@& C< <PA . G6< D<1 ?' =< ' C< . 'D ' A@A . < @< A1 < ' C< G< G6< 1 ' . A 'G; I1 F<=' G<;1=C<@' 9' 9A . 1 <N ;<I 6 =' D; >< B ' 1 ' <I<; '@1;<F 1 'N GA . < ' 9' C< AP<=' EA=' ;<9B=<@' N DA @=' 9' G<A=A =' >' C< E ' 9' A6A1=' D ' A==AB6 'N A @' A' ?;<A ' B . D<;' 9' C< 1 CAD1 A =' J9' +W;1? ;@' A @' LB<;F & ;< B F1 ?' A66' A66<?1A F< ' C< 0 I<; . < & EC1FC' AP<@' <I< ' . A;;1A?<=' A @' DAG 1= . =& 9<66' DAF>' 1 ' A' = A < 9' A B;<& . A;; 1 ?' E1 C B ' 9 ; . A61 1<=' A @' DAG 1M1 ?' C<1;' FC16@;< ' C< . =<6I<=' B1=' : ' =< ' 'G; G =< G<AF< ' C< %B FC& QED .' C< CA@' 9 ; . <;6 ' = ' F;B<66 ' CB . 161A <@& DB ' C1=' < I & C< +;<=1@< ' B166W& EA=' ;<F<1I<@' 51 ' 66A @' E1 C' CAB?C 1 <==' A @' F < . G ' ;' = . < 1 . < C< F B6@' ' <I< ' D A1 ' A ' AB@1< F<& DB ' A ' 6< ? C' 1 ' EA=' 1 1 . A <@' 61A ' C< -1 ?' . B= ' C1 . =<69' 9 ;F< C1=' ?;A @= ' ' AD@1FA < C1=' 1;;< <' C1=' CB . 161A 1 ?' G; G =1 1 'EA=' ;A = . 1 <@' ' C< - 1 ?3=' B F16# F . G =<@' 9' C< %ABGC1 & C< %B>< 9' (B;?B @ & C1=' = & C< CA F<66 ;' + FCA; ;A1 & C< %B><

G6AF<=' 1 ' 6A @<;= " <' <I< ' CB . D6<@' C1 . =<69' = ' . BFC' A=' ' 99<;' A' . 1661 ' A' . C' ' A==1=' C<' A661<=' ' @< C; <' C1=' ?;A @= ' (B ' A66' EA=' 1 ' IA1 ' C< ' . A@<' 1 ' A ' 6 1 . A B . ' CA ' C<' =C B6@' C1 . =<69' < 0 ?A?<' ' @;1I<' C1=' ?;A @= '9; .' GA1 ' 5

' C1=' KB F B;<' I . <PG<F <@' <I< =' FFB;;<@' '=AI<' ;A F<' < @V . <' ;<AGG<A;<@' 1 ' GA1 ' EC<;<' C1=' A . <' <99<F <@' G; @1?1<=' 1=' I1F ; ' 9' 166AI1F1 =A' @<= ; <@' C<' A; . ' 9' C<' ;FC@B><' CI;6<=' A @' =AI<@' C<' F; E ' 9'+C161G' ' 'EA=' A9 <;' C1=' DA 6<' CA ' < @V . <' =A1@' '+C161G' E ; ' B ' QE1 C' 9A 1?B<' A @' . A 19<= 1 ?' <I<; ' @<=1;<' =6<<G' [1;<' ' E166' . A><' B' C<' . =' ?6 ;1 B=' D<@ ' A9 ##I111A;1 ?$BA>',5 EC1FC' A' - 1 ?' CA=' <I<;' =6<G ' A @' D< <A C' C<' =CA@<' 9' A ;<<' C<' G;<GA;<@' 9 ;' C1 . ' A' F BFC' F . G =<@' 9' 96A?=' A>< ' 9; .' C< < < .

';<I 6B 1 ' EC1FC' >' G6AF<' 1 ' C<' ?61=C' B; 'EA=' <I< ' . ;<' =<;I1F<AD6<' ' ;A F<' C<' %BFC<==' 9' A;6D ; B?C' < @<@' LB<< ' <' A @' C<;' @1=?;AF<' 6<@' ' CA ' 9' C<;' C 1=DA @' C<' 6<A@<;' 9' C<' C1?=' Y' C< ' A66 G E<;9B6' C<' ;1<=' FA . <'1 ' G E<;' A @'9 ;' C<' GB;0 G =<' 9' F . G6< 1 ?' C<' ;B1 ' 9' A;6D ; B?C' C< '1 F61 <@' C<' LB<< ' EA;@=' G<AF<

C<' @<A C' 9' C<' . G<; ;' S =<GC' A==1= <@' C< . ' 1 ' C<1;' @<=1? =' C< ;FC@B><' CA;6<=' C1=' D; C<;' C<' F . G< 1 ;' 9'+C161G' ' D A1 <@' C< . G<;1A6' ; E ' A @' 1 FB;;<@' 1 ' C1=' B; ' C<' ;<G; AFC' 1' A=G1;1 ?' B 1I<;=A6' . A;FC ' +; .' C1=' 1 . <' ?6A @' EA=' '6 ?<;' 1 <;<= <@ 1 ' =BGG ; 1 ?' C1=' F6A1 . =' ' C<' C; <' 9' GA1 ' A @' A?;<<@' ' A' ;BF< E1 C' ;A F<' A;6D ; B?C' EA=' ;<FA66<@' A @' C<' %B><' 9' ; . @' C1= =BFF<== ;' ;<F<1I<@' ;@<;=' ' ;< . A1 ' <B ;A6' # ' C<' =A . <' 1 . <' %B?BA ; B1 ' EC ' EA=' A ' C<' C<A@' 9' A' = . A66' 96<< ' DB ' EC ' CA@' F, . . 1==1 '1 ' C<' AI 3E' FAG 70 B;<@' 1 ' SA <1; ' C<' FAG1 A6' 9' >Q$+ 'B3' $B0 (;AM16' B?< <' C E<I<;' F 1 B<@' C1=' FA;<<;' 9' F JB<=' SA <1;' #' 4 & D D>K 7BD ; 1 ' 6A @<;=' 6 C B?C' @<G;1I<@' 9' C<' =BGG ; ' 9' C<' ?61=C' C<' EA=' A ' C<' C<A@' 9' A ' A; . 'EC1FC' <PF<<@<@' CA ' 9' C<' ;< FC' D ' E< ' C B=A @' . < ' A @' EA=' . A= <;' 9' (BFCA1 ' A @' LB<= N' A @' D< E<< ' C1 . ' A @' +A;1=' C<;<' EA=' ' = ; ?' 9 ;9;<==

I' + #$AM' LB#$<$?3<$$ ' S@7@' CGC@C' $+<B' <SB' L>7<$@A%<M><' B3' <M@' $ ' >+C' <M><' B3' <M@' B7$@A' M@' M$ A' SB7@' #@AA' C@GB<@C' <M>+' <M@' B7$@A' <B' <M@' ; >$+<@+>+?@' B3' <M@' L7@7B ><$G@A' B3' <M@' 7BS+' >+C' <M@' L7G#@ @A' B3' <M@' $ #$?>D' MD7?M' >+C' <BBQ' <M@' ?M$@3'L>7<' $+' <M@' BGB#D<$B+' B3',

A ' ;<FC ' 1 ' 2 8 ' =' G;1 F1GA6' G; I1=1 =' E<;<' CA ' +C161G' '
=C B1A' D<' AF> E6<@?<@' A=' -1 ?' 9' GA1 ' DB ' CA ' C1=' L@>?@B3 <7@?M<'
. A;FC '=C B6@' D<' @1= . < . D<;<@' 1F16 ' EA=' ?1I< ' ' <'
%B><' 9' AI ' E1 C' C<' 1 6<' 9' -1 ?' C<' ?61=C' D A1 <@' 1 ;FA'
A @' 01D;A6 A;N ;A F<' A6= ' F<@1 ?' ' C< . ' B@= 3=' (A ' <E0
9 B @6A @' A @' ' C;1= GC<;' B1=' : ' ?BA;A <<@' C<' =BFF<=A '
' C<' ?61=C' C; <' ' C<' +; <= A ' 61 <' G; . 1=<@' ' @< . 61=C' C<'
G ; ' 9' %B >1;>' C<' F = ;BF 1 ' 9' EC1FC' CA@' F = ' C1 . ' 1 . . < =<'
=B . =N ADA @ <@' A' G ; 1 ' 9' C1=' F JB<= =' 1 ' C<' E' B ;1<=N A @'
;<F I<;<@' 166<' 1;<' (# CB;1<' A @' A1 < A ' C<' 6<F ;' 9'
(;A @< D B;?' EA=' ;<F ? 1=<@' A=' -1 ?' 9' +;B=AA' A @' D A1 <@' C<' BGG<;'
0B<6@<;'6A @' C<' G;1 F1GA61 ' 9' <B9FC <6' A @' . A ' C<;' @1= ;1F = '
C<' . G<; ;' CA;6<=' ' ;<9B=<@' A ' 91;=' ' K 1 ' 1 ' C1=' G<AF<N' DB '
166A;=' 9 ;F<@' C1 . ' ' @ ' = ' D ' F; ==1 ?' C<' C1 <N' EC16=' B?< <'
< ;< FC<@' C1 . =<69' 1 ' C<' 61 <c' 9' 1 ?< ' EC<;<' C<' EA1 <@' ' D<'
A AF><@' ' 9 ;F<@' . A;FC' 9' =1P << '6<A?B<=' 1 ' E< 'C B;=' D< @'
C<' = ;<A .' @<61I<;<@' 1 ' C<' CA @=' 9' C<' ;< FC' G1;<' ; . =N A @'
A66' C<'9<;;1<=' 9' C<' C1 <' AD I<' A < F<' A @AB' A @' ;1D B;?' E<;<'
1 I<= <@' A @' E<;<' A6= ' A><' ' D ' B;' ; G=' B?< <' C E<I<;' CA@'
A6;<A@ ' ;<F<1I<@' ;@<;=' ' <? 1A <' A @' A' G;<61 . 1 A; ' ;<A ' EA='
=1? <@' D< E<< ' 166A;=' A @' C1 . =<69' A ' A= A@ N G<AF<' D<1 ?' @<91 1 1I<6 '
F F6B@<@' D ' C<' 2 C' <G < . D<;'9 66 E ?' A ' (A@< ' D< E<< ' ;A F<' C<'
. G<;G;' A @' C<' . G1;<' (' C1=' G<AF<' C<' . G<; ;' +<HF<' 9' >C@+'
D A1 <@' C<' E' B ;1<=' C<' 16A <=<' A @' C<' >1 ?@ .'
9' AG6<=' @1= . < . D<;<@' 9; .' C<' . A;FC ' 9' GA1 N A @' A6= ' ;<F I<;<@'
;1D B;?' A @' A66' C<' 9 ; =' ' C<' ;1?C 'DA >' 9' C<' C1 <' ;A F<';<0
A1 <@' A @AB' A @' C<' 6<9 'DA >' 9' C<' C1 <' C<' 6<F ;' 1' (AIA;1A'
EA=' ;< <= AD61=C<@' 1 ' C1=' ;1?C =' A @' @1? 1 1<=' 66' C<' = I<;<1? ' +;1 F<='
9' C<' . G1;<' ;<F I<;<@' C<1;' A <=' 66A @' D A1 <@' D ' A' C1;@' A @'
91 A6' ;<A ' EC1FC' EA=' =1? <@' 1 ' 2 7' C<' ;1?C ' 9' ?A;;1= 1 ?' . A '
G6AF<=' 1 ' 61<' E' B ;1<=' EC1FC' ;A F<' ;<= ;<@' '1 N DB '1 ';< A1 <@'
C<' G;1 F1GA61 ' 9' ;A ?<' E1 C' ;<=G<F ' ' EC1FC' C<' B=<' 9' A==AB'
CA@' F<@<@' 1 =' ;1?C =' ' CA ' 9' (;A @< D B;?' BFC' E<;<' C<' ;<=B6 =' 9'
C1=' @1=A= ; B=' EA;' 9' E<6I<' <A;=3 @B;A 1 ' ;A F<" G;<=<;I<@' 1 ='
39; 1<;=' D ' C<' G<AF<' 9' ;<FC N DB ' 1 =' 1 . . < =<' =AF;191F<=' CA@' G< <@'
A ' AD ==' 1 ' EC1FC' C<' A;FC ' EA=' 91 A66 ' < ?B69<@
C<' ;<I<;=<=' C<' CA@' =B99<;<@' 1 ' C<' EA;' A @' C<' @1= ;<==' =B99<;<@' D

F L . . @ D<< ' < @ E<@ E1 C G;<F<@< F< I<;' A66 C< 91;= ' D6<= 9 C1= >1 ?@ . A @ C ' E< ' < ' 9B; C<; 9 ;' D ' A ' <@1F ' 1==B<@ 1 ' 2 C< ?A I< ' C< . ' A @ C<1;' @<=F< @A =' A ;1?C ' 9=BFF<==1 ' ' C< ; 'K I ' 9 ;A F< 1 ' @<9AB6 ' 9 6<?1 1 . A < G;1 F<=

C< - 1 ? C E<I<; EA= E ?; E1 ? 9<<D6<;' @A ' D ' @A ' 1= ?;<A ?;A @= EC ' EA= ' =BFF<<@ C1 . ' C< C; <C EA= 6 ' 91 I< <A;= 9 A?<C A @ C< <?< F ' E B6@ @<I 6I < BG ' C1= <GC<E +C161G 9 ;6<A = P1 B= 1I1 C ;<=G<F ' ' C< 9B B;<G; =G<F = 9 C< E ' +;1 F<= EC . ' =C< CA@ D ; B?C ' BG A@A . <@< A1 < ' G<;=BA@<@ 96 B1= C< - 1 ? ' . A>< A E1 ' EC1FC 61 . 1 <@ C< G E<;' 9 C< <?< ' D ' C< <= ADCAC . < ' 9 A B F16 9 EC1FC C<%B><@B A1 <A @ C< B ' @ ' B6 B=< E<;< ' D< . < . D<;= ' B1= : ' C1 . =<69 CA@ 61 6< F 91@< D< CA ' D<@1< F<E B6@ D< GA1@ ' C1= <= A . < EC1FC C< F 91@<@ ' C< +A;61A . < E1 C ;@<;= CA ' 1 ' EA= ' ' D< G< <@ D<9 ;< C1= @<A C (61 @<@ D ' G;1@< A @ C< CAD1 ' 9 < K 1 ? AD= 6B < G E<; B1= ?;A@BA66 ' @;<E <A;' ' C< . D E1 C A D;1B ' 9166<@ E1 C @1=A= ; B= G; K<F = ' %<A C A= 1 ' AGG; AFC<@ C1 . 9 B @ C1 . ' G6A 1 ? C< A==< . D6 ' 9 A A 1 A6 B F16 9 ;' C< GB;G =< 9 < AD61 ? < G ; 1 ' 9 C1= F6<;? ' ' G; =F;1D< C< C<;< ?B691 ? 1 . . < =< = . = 1 ' B=<6<== DB16@0 1 ?= A ' A;6 9 . < 1 ? A ' ;<I 6 ' 1 ' ?6A @ A @ A < . G 1 ? 1 ' @<=G1 < 9 C1= = 6< . ' G; . 1=< A 91 A6 <99 ; ' 1 ' 6A I B;' 9 C< = ' 1 SA . <= ' EA;@= C< < @ 9 C1= 619< C E<I<; ;< B F1 ? <; ;<= ;1A6 1 <;<= = C< 9<66 1 ' A D< <;' 9;A . < 9 . 1 @ A @ D<F . 1 ? = 6<6 ' FFBG1<@ D ' A =< = < 9 C1= . <;< CB . A 1 EA= 9 < ' C<A;@ ' F; [' C< ' ' EA= - 1 ?z 1 C ;<=G<F ' ' 6B= @<A C EC1FC EA= ;< . A;>AD6< 9 ;' C< ;<=1? A 1 ' A @ . AK<= ' C< @1=G6A <@ 1 ' C< =BG;< . < . . < A @ EC1FC . A ' D< ;<0 ?A;@<@ A= A ' ?;<A ' 6<== E< =CA66 C<;< D ;; E = . < @< A16= 9; . ' A ' < <0 E1 <==)Y , [D B ' C< D<?1 1 ? 9 B?B= 2 7 C< - 1 ? F . 0 G6A1 <@ 9 A =F1A 1FA 1 ' C< 6<? EC1FC EA= 9 B @ ' D< A ' 1 FB;AD6< E 1 . @ ' ' C< C C< . A6A@ ' @<F6A;<@ 1 =<69 DB ' C< <I<; C<6<== F 1 B<@ ' E ;> 1 ' C1= D<@ ;1=1 ? 9; . ' 1 . < ' 1 . < ' ' C< C B?B= C< F 9<==<@ C1 . =<69 ' A C<;' <661<; A @ ' C< 9 66 E1 ? @A 9<<61 ? I<; ' 166 C< ;<F<1I<@ <P ;< . < B F 1 ' 9; . ' A;@1 A6 CA ' C< CA I1 ? CA@ A66 C< ?;<A ' 991F<;= 9 C1= C B=<C 6@ ?A C<;<@ AD B ' C1 . C< =A1@ ' C< .) [' O< 6< . < ' A=> B;' GA;@ ' 9 ;' C< DA@ <PA . G6< ' CA I< ?1 I< ' B ' ' CA I< ' CA > B 9 ;' C< . A <;' 1 '

o *) @ ; B$7A 9 C ' %B>< @< ' 1 . ` &

fA=G1K<@' = ' . A ' ?;<A ' 161 ?=' @I1;1 ?' =1P ' <A;=(' CA=' A ' 1 F <= AD6<' 91?C (' 19' ' ' C<' 6 I<' 9' ;A F<(' A ' 6<A=' ' @' 1 =' ;<=G<F ' A @' 1 =' A@ . 1;A 1 Y

. ?=' C<' E ;>=' 9' B1=' : (' C =<' EC1FC'1G; @BF<@' C<' ;<=B6 =' C<' <PG<F <@' 6' C< . 3(' EC1FC' =B; I1I<@' C1 . ' C<' 6 ?<= (' A @' E<;<' C<' . = ' B=<9B6' 9 ;' ;A F<(' A6 . = ' EC 66 ' @A <' 9; . ' CA ' ?6 ;1 B=' G<;1 @' ' C1=' ;<1? ' 1 ' EC1FC' 6D<; ' EA=' = 166' A61I<' 1=' D<= ' AFC1<I<. < =' F =1= <@' 1 ' C1=' I1? ; B=' F< ;A6' A@ . 1 1= ;A 1 'N C1=' 6<?1=6A 1 (' A6 C B?C'1 ' . A ' ;<=G<F =' = A1 <@'D ' DA;DA;1= . =N' C<' <E' ;?A 1MA 1 'C<'?AI<' 'C1='A; . N' C1='AFA@< . 1FA6' 9 B @A 1 =N' C1=' FA A6=N' A @' C1=' . A;1 1 . <' F = ;BF 1 = ' C1=' A;FC' <= AD61=C<@' D ' C1 . =< - ' A' 0 I<; . < ' EC1FC' C<' A6 <' > <E' C E ' . A1 A1 ' B;; B @<@' D ' ?;<A ' . < (EC . ' C<' > <E' C E ' 1 <;<= ' 1 ' C1=' ?6 ; 'N C<' G; <F ;' 9' 61 <;A B;<' A @' C<' =F1<@F<=' N 9' C<' 61 <' A; =' A @' 1 @B= ; N' 6 ?' A' 9 ; 1 . A <' EA;;1 ;(' A @' . A? 191F< ' 1 ' 'C1=' 9s <=(' C<' 1 . G =1 ?' B1=' : ' =<< . <@' 'CAI<' D<< ' D . ' 'D<' D< <@ ' (B ' C<' 6<9 ' ' C1=' =BFF<== ;=' A' DB;@< ' @1991FB6 ' ' D<' D ; <(' 1' EC1FC' C<' C1 . =<69'9<6 ' C<' E<1?C (' A @' C<' < @' 9' C1=' ;<1? ' EA=' @<G6 ;AD6<' 1=' ?< 1B=' D<FA . <' 9<<D6<(' =BFF<==' ADA @ <@' C1=' A; . =(' C1=' ;<1#1; ' D<FA . <' <PCAB= <@ ' C<' E1@ E' ' FA;; ' ; 16<@' C1 . (' A' I<PA 1 B=' A @' F;B<6' D1? ; ' G;<IA16<@' 1 ' C1=' F B F16=' A @' ;< @<;<@' C1 . ' A' G<;=<FB ;'N A' CB?<' EAI<' 9' . 1=<; ' 1 B @A <@' ;A F<(' A @' D ;<' . A==<=' 9' G I<; = ;1F>< ' _E;< FC<=' ' C<' I<; ' ?A <=' 9' <;=A166<=' 1=' 6 ?' ;<1? ' ;<=< . D6<=' A' @A ' EC1FC' @B;1 ?' = . <' C B;=' 1=' D;1661A 'E1 C' @AMM61 ?' 61?C (' DB ' EC1FC' 1=' A 6< ? C' 6 = ' 1 ' @A;> <== 9

C<' @1;<F 1 ' ?1I<' ' C<' A 1 A6' . ;A6=' D ' C<' B; ' 9' B1=' : ' CA=' D<< ' E; ?6 ' A ;1DB <@' 'C1 . ' A=' A' . <;1 ' ' 1=' ;B<' CA ' C<' @1@' . BFC' EA;@=' C<' F1I161MA 1 ' 9' C1=' F B ; ' D ' G 61=C1 ?' 1 =' 6A ?BA?<' A @' 1 =' . A <;='N DB ' C<' 1 . G; I<. < ' EA=' @1= 1 ?B1=C<@' ;A C<;' D ' C<' _<6<?A F<' 9' <P <;1 ;' 9 ; . =' CA ' D ' @<61FAF ' 9'=< 1 . < ' C<' E;1 1 ?=' 9' (;B];<' A @' GFC<9 BFAB6@(' 9' A1 1 . (' A @' C<' G < =' 9' C<' G<;1 @

I' ' KB7Q B3' 7@><' $+<@7@A<' @+<$<#@C' P' M@' B7QA' B3' B+$A' " 0' S>A' L+J#$AM@C' 3B7' <M@' 3$7@<' <$<M@' $+' , ' <' ?B+A$A<@C' B3' >' LB7<$B+' B3' M$A' ?B77@ALB+C@+?@' >+C' M$A<B7$?>#' >+C' LB#$<$?>#' L$@?@A' AB ; @' @N<7>?<@C' 37B ; ' M$A' <$B7CA' >+C' M$A' S7$<$+ A' >+C' <M@' B<M@7A' @$<M@7' C$?<><@C' MK' M$; ' B7' C7>S+' DL' JK' M$A' BS+' M>+C ' @$<M@7' 3B7' M$A' L@7AB+>#' DA@' B7' 3B7' <M@' $+A<7D?<$B+' B3' <M@' >DLM$+' >+C' <M@' $+ ' B3' L>$+' M$#$L' ' M$A' ?B##@?<$B+' M>A' J@@+' >LL7@?$><@C' S$<M' ; D?M' <>#@+<' >+C' $+<@##$ @+?@' JK') ' 7@KAA ' SMB' M>A' 7@?@+<#K' $AAD@C' >' +@S' @C$<$B+' B3' $<

<' 'BA@LM' 7BV

q ' ' ' <# ' ' : !> ' 8* -' $

A;< =B991F1< 'G; 9= 9 C1=' '?< <;A6 F < . G '9 ;' . A; ;1A?<N A '<A?<; <== 'AFJB1;<? 6@ A 'A 1 . < EC< 'A6 . = 'A66 @1= 1 F 1 = E<;< 'D< GB;FCA=<@N A '1 @199<;< F< A= ' C< = B;F< 9'9 ; B <(C E<I<;' =CA . <9B6N A' ;A?< 9 ;' ?A . D61 ?N 1 @B6?< F< E1 C ;<=G<F ' I1F<=N A @ 91 A66 (A' ;<61?1 B= C G F;1= (FCA;AF <;1M<@ C< F B; 1<;= A ' C< F6 =< 9 C1= ;<1? ' C<=< @<G6 ;AD6< <PA . G6<=(;< @<;<@ = 166 . ;< @A ?<; B= D ' C< D;1661A ' CB<= E1 C EC1FC C< 'E<;< F 6 B;<@(<P<;F1=<@ I<;' C< A 1 ' A' . = '@1=A= ; B= 1 96B< F<' C<=< 1 . <= E<;< ;< @<;<@ 166B= ;1 B=(C E<I<;(D ' C< D;1661A F ' 9 C1?C I1; B<=(<=G<F1A66 '1 '1C =< @1;<F 1 = 1 ' EC1FC C< 1 0 96B< F< 9 C< B; ' CA@ 'G< < ;A <@ ' C< G; I1 F1A6 D161 (R C< . A?1= ;AF (A @ A' G ; 1 ' 9 C< F6<;? (99<;#<@ A ' WPA G6< 9 GB;1 ' 9 . ;A6=(1 <?;1 (A @ F < . G '9 ;' . < ' (B '1 ' EA= 1 ' IA1 ' CA ' . A ' ;<=G<F AD6< 6A< ' ;<=1= <@ C< ?< A;A6 ;;< ' C< 9 66 E1 ?' ;<1? ' A??1 A ' IA <@ 61< E B @= EC1FC CA@ D<< ' G< <@ @B;1 ?' CA ' 9 C< 0;<A ' -1 ?(A @ C< F ;;BG 1 ' 9 C< B; ' F ;1DB <@ A= . BFC A= C< F 9B=1 '1 ' C< 91 A F<= '=CA>< C< . A;FC ' '1 =9 B @A 1

C< ;<1? ' 9 B1= : ' EA= < 9 C< ?;<A 'G<;1 @= 9 C< = = < . ' 9 C< DA6A F< 9 G E<;' 1 ' B; G<' E ' A <=(+;B==1A' A @ AI (A A1 <@ 1 ' C< F I1;=< 9 1 ' A' @ BD6< G ; 1 ' 9 G E<;' C< 91;= (;A1=<@ ' C< ;A >' 9 A' >1 ?@ . (EA= 91 <@ 'F 1 . <;DA6A F< 1 ' C< ; C 9 0<; . A ' C#1 96B< F< <P<;F1=<@ D ' B= ;1A' 1 ' C< = B C 9 CA 'F B ; N A @ C< =<F @(AB? . < <@ D ' 1F16 (EA= @<= 1 <@ 'F6 =< A6 'A?A1 = ' B= ;1A' A @ ;A F<' C< 6A <;' >' G ==<==1 (1 . @<;' B1= : (9 C< GA; ' EC1FC @B;1 ?' C< G;<I1 B= G<;1 @ CA@ D<< ' G6A <@ D ' GA1 (A @ EA= 6 ?' C< @ . 1 A 'G E<;' 1 ' B; G<(D ' ;<A= ' 9'1 = <P < (C< = ;< ? C 9 1 = ? I<; . < (C< 1 96B< F< 9 1 = F1I161MA 1 (A @ C< . A; I<66 B= F F B;=< 9 =BG<;1 ;' 1 <66<F = EC1FC ;< @<;<@ 1 '166B= ;1 11=

(1= 9; .' C< AFF<==1 ' 9 1661A .' '1 ' * (CA ' C< <;A' 9 ?61=C 61D<; ';<A66 '@A <=' 1 F< CA ' 1 . < ?6A @ CA= 'F<A=<@ ' 1 F;<A=< 1;1' G GB6A 1 'A @ 1 ' G E<;' LB<< ' <(EC ' E<@ A66 C<;' ?6 ; ' ' C< F<6<D;A <@ 1 < ' 9 C<;' ;<1? (G;<F<@<@ B1= : ' D ' A' 9<E @A = ' C< . D(A @ C< 6<F ;' 9 A I<;' =BFF<<@<@ C<;' D ' C< A . < 9 0< ;?< Y B==1A(EC1FC CA@ D<< ';A1=<@ D ' C< ?< 1B= 9 +< <;' C< 0;<A ' 1 #A

I' M$A' 7$+?@ S>A C@A?@+C@C 37B ;' <M@ C>D M<@7 B3 '> ; @A ' S$3@ B3 <M@ #@?<B7 >#><$+@ ' M@ AB+ B3 '> ; @A ' J@$+ ' @N?#DC@C 37B ;' <M@ <M7B+@ >A >' ><MB#$?' >+C M$A A$A<@7A ') >7K >+C ++@ ' M>G$+ '#@3< +B ?M$#C7@+ ' ! @B7 @ B3 >+BG@7 S>A <M@ +@N< M@$7

<E' . G1;<f EA=' 91; . 6 ' ; <@' 1 ' C<' ; C' A ' <' <PG< =<' 9' E<@< f E' @<G;1I<@f D ' 61<' ;A=C' EA;='1 . @<; A>< ' D ' CA;6<=' : f 9' C<' C1?C' ;A >' ' EC1FC' 1 ' CA@' D<< ' ;A1=<@' D ' 0B= AIB=' @ 6GCB=' B= ;1A' 6A ?B1=C<@'1 . @<;' C<' ;B6<' 9' CA;6<=' f A @' O<; . A 'G<AF<AD6 ' D< <@' 1 =' B . <; B=' = I<;<1? =' C<' GA 1=C' . A;FC f EC1FC' CA@' D<< ' @<0 G;1I<@' D ' C<' +<AF<' 9' ;<FC ' 9' . A ' 9' 1 =' G ==<==1 =f F 1 B<@' ' @<F61 <f EC16=' 66A @f ;< @<;<@'166B= ;1 B=' D '1 =' EA;=' A?A1 =' B1=' : f A @' =CA;1 ?' E1 C' ?6A @' C<' < . G1;<' 9' C<' F<A f A A1 <@' C<' C1?C<=' G 1 ' 9'1 =' E<A6 C' A @' G E<;' BFC' EA=' C<' = A <' 9' B; G<'1 ' 2 7f A ' C<' @<A C' 9' B1=' :

FC<.1FA6'=B@1<=' 'EC1FC'C<'@<I <@'C1.=<69' 1='F @BF'1';<=G<F' ' C<'K;A1.?'-1?'<I< BA66'?AI<'C<'.='@<F1@<@';<9B A1 ' 'C<=<' FA6B. 1<=' B1=':';<9B=<@' 'D<61<I<'C<.'DB'D<1?'<I<;C<6<==' <1;<6'AD=;D<@'D'A P1<'9;'C<'1 <;<=='9'C1='6<?1 1.A<'FC16@;<' C<' 6'D<= E<@'BG'C1=' <GC<E'D'C1='E166'A'1 6<'E1 C B'A';<A6' G E<;' <'=<GA;A<@'C<' <?<F'9;.'C<'B ;=C1G'9'C<' B ?'-1?' EC1FC' ?<C<;'E1 C'C<'F..A @'9'C<' A6'C B=<C 6@';G='EA=' F 91@<@' 'C<'%B><'@B' A1<'N' B F16'9'<?<F'9;.<@'9' F B;1<;='A @'9;.<;' 1 1=<;='A @'1 'EC1FC'C<'%B><'9';6<A='EA=' 6' 'CAI<'A'@<61D<;A 1I<'I 1F<'EA=' '<P<;F1=<'C<';<A6'=I<;<1?' AB C ;1

CA<I<;'<? 1=.'C<;<'.1?C'D<'1' . 1I<='9'C<'-1?3='91 A' ;<=6B 1 ='1<'9'=<;1 B='.1@='A @'AB=<;<'.;A6='F B6@' 'DB'CAI<' =<<'1I1 C'A P1<'C<'=BG;<.<'G E<;'GA==' E1 C B'F ;6'1 'C<' CA @='9'A'.A'EC'EA='<?A;@<@'E1 C'='.BFC'=B=G1F1 'D'GBD61F' G1 1 '(B'C1='+;1 F<'FC<;1=C<@'6 9'G;<<=1 ='A @'E1 C'? @' ;<A='';<F> <@'CA'C<'E B6@'D<'<AD6<@' '=B=A1'C<.'D'C<' A==1=A F<'9'C<'F B;1<;='EC'E<;<'E<A;'9'C<'.A=>'9'@<I 1' 1.G=<@' 'C<.'D'C<'6@'-1?'A @'9B66'9'C G<'1'C<';<?<F'9'A' .A'9'G6<A=B;<N 9'C<'+A;61A.<='EC1FC'E<;<'1.GA 1<'' 61;E' ,,'C<'=A<'9'G 61 1FA6' B661'1'EC1FC'C<'CA@';<.A1 <@'9;'919' <A;=N'A @'91 A66'9'CA'F;E@'9'C<'=F GCA ='9'9;1.<'EC' E1 C B'G;1 F1G6<='';'=<6<@'G1 1 ='A;<'A6EA =';<A@''I<<;';B @' 5E1 C'1'A @'A;<'GA;1FB6A;6'AFB<'1'G<;F<1I1?'EC1FC'=1@<'1='C<' =;?<;

'C<'@A'9 66 E1?'C<'@<A C'9' B1=': 'A9<;'A' 1?C'GA==<@'1' 1 ;1?B<='A @'.A>1?'6A IIAC'G;.1=<='<I<;'=1@<'C<'%B><'9';6<A =G;<=< <@'C1.=<69'D<9;<'C<'+A;61A.<'AFF .GA 1<@'D'C<'+;1 F<='C<' G<<;='9'C<'>1?@ .'A @'A' B.<;B='9 66 E1?'9'F B;1<;='A @'991F1A6='EC .'C<'CA@'?A1 <@'I<;''C1='1 <;<=='' A'I<;'=>169B6'CA;A ?B<' C<'%B><'@1=G6A <@'C1='A P1<'';<F<1I<'9;.'C<'+A;61A.<'C<'1 6<' 'EC1FC'D'C1='D1;C'C<'CA@'A';1?C N A @'C<'A9<;'CAI1?'?1I<'611=' A==<.D6''B @<;=A @'CA'C<'E B6@'A <@''C<1;'=B??<=1='C<';<A@' C<'5E 6' C<'?;<A<;'.B D<;'9'C<'.A?1=;A<='A @'A. ?='C<;='C<' A@I FA<=?<<;A6' 1661A.'@<' A. 1? '+<<;'016D<;'@<='1=1='' < ; ;A F1='@3 ?B<==<AB' EC'A9<;EA;@='D<FA.<' CA F<66;' A @' S 6'@<' 6<1;;' G; FB;<B; ?<<;A6'E<;<'@<I <@''C<'%B><N A @'1

'

B . <; B=' I1F 1 . =' A 'D1=C G=ƒ A @' A' F; E@' 9' G;1<= =' A @' 6A . < ƒ EC '91A@' D<< ' G; =F;1D<@' 'AFF 1 . ' 9' C<' 1I;< FC<@' C< 6 ?1FA6' @1=GB <=' E<;<' ;<FA66<@N' A @' 91 A66 ƒ k1<' <?< ' ;@<;<@' C<' GBD61FA 1 ' 9' C<' [' <6< . AF61B= `' 'EA=' X . @<;' C<=<' CAGG 'AB=G1F<' CA 'C1=' ? I<; . < ' F . . < F<@

C<' 1 96B< 1A6' . < 'E<;<'@1I1@<@' 1 ' E 'GA1 1<=) C<' <ƒ CAI1 ?' A 1 =' C<A@' A;=CA6' 166<; zƒ C<' B ?' A;FC3=' ? I<; ;ƒ 9A1 C9B6' ' C< G 61F ' 9' B1=' : ƒ E1=C<@' ' . A1 A1 ' A' = ;1F ' A661A F<' E1 C' GA1 ƒ C< ' ? I<; <@' D ' C<' 9A . B=' A;@1 A6' 6D<; 1ƒ EC '9; .' D<1 ?' A' =1 . G6< F . ; 'FB;W' CA@' ;1=< ' 'D<' C<' 1;=' 1 1= <;' 9' +C161G' N EC16=' C< C<;'1 F61 <@' ' A ' A661A F<' E1 C' ?6A @' %BD 1=ƒ 1 ' C<' GA ' 9' C1= G E<;ƒ A' F 1Fƒ A @' A' =>166<@' 1 ;1?B<;ƒ EC ƒ A9 <;' D<1 ?' C<' <?< 3= B ;ƒ CA@' D<F . <' C<' . 1 1= <;' 9' C1=' @<DABFC<;1<=ƒ A @' ;B6<@' C1. C; B?C' C<' ;1G6<' A?< F ' 9' A ' < <;?< 1F' E166ƒ I1F<ƒ A @' CAD1 ƒ EA=' C< = B6' 9' C<' 6A <;' GA; ƒ EC1FC' C<' ;<G;<=< <@' A=' D<1 ?ƒ 1 ' FA=<' 9' A IAFA F ' 9' C<' 61; <ƒ C<' = ; ?<=' DA;;1<;' A?A1 =' C<' G;< < =1 =' 9 +C161G' ' ' C<' C; <' 9' ;A F<N A6 C B?C' CA ' +;1 F<' CA@' 9 ; . A66 ;< 1 . F<@' C< . ' EC< ' C<' AFF<G <@' CA ' 9' GA1 ' ;@' A1;ƒ C< ?61=C' A . DA==A@ ;ƒ A' F . GA 1 ' 9' C<' <?< 3=' G6<A=B;<=ƒ @;<E' C1. 1 ' C1=' A661A F<ƒ A @' . A@<' C1 . ' GB;FCA=<' 1 ' D ' C<' <PGB6=1 ' 9' C< +;< < @<;ƒ C<' = ' 9' SA . <=' ƒ A @' C<' @< . 61 1 ' 9' C<' G ;' 9 A;@1F>ƒ EC1FC' B1=' : 'CA@' 1 < @<@' ' D<' A' =BD= 1 B <' 9 ;' CA ' n %B >1;>' ' ;1G6<' A661A F<' EA=' 9 ; . <@' D< E<< ' ;A F<ƒ

?6A @ƒ A @' 66A @' ' C<' 9 66 E1 ?' <A;ƒ C<=<' C;<<' ?A @A #YdY' G E<;=' =1? <@' F K 1 6 'E1 C' C<' . G<; ;' A' <E' ;<A ƒ > E ' D ' C<' A . <' 9' C<' ;<A ' 9' C<' LBA@;BG6<' 661A F<N A @' GA1 ' EA=' =B . . <@' ' AFF<@<' ' 1 ' E1 C1 ' C;<<' LBA@;BG6<' .' 0' . C=

C<' <?< ƒ A6EA =' A P1 B=' ' C<' =BDK<F ' 9' C<' G;< < =1 =' 9' +C161G' ' A @' C<' 1 ;1?B<=' 9' 6D<; 1ƒ CA@' 1 ' C<' C<A;' 9' C1=' >1 ?@ .' . A ' < < . 1<=ƒ = . <' 9' EC .' CA@' D<< ' ; B=<@' A?A1 =' C1 . ' D ' C<' 9 ;F<' 9' F1;FB . = A F<=ƒ A @' C<;=' D ' C<' <;; ;=' 9' C1=' 0 I<; . < ' A @' C1=' G<;= A6' . 1=F @BF ' 1=' @<DABFC<;1<=' A @' C<' =FA @A6' 9' C1=' ;?1<=ƒ EC1FC' E<;<' G;<=1@<@' I<;' D ' C1=' @AB?C <;ƒ C<' %BFC<==' @<' (<;;1ƒ A=' E<66' A=' C<' =CA . <9B6' ;A >' A @' 1 96B< F<' AFJB1;<@' D '%BD 1=ƒ CA@' @1=0 ?B= <@' <I<; 'C <=' C<A; ƒ A @' <PF1 <@' A?A1 =' C<' <?< ' C<' ?< <;A6' GBD61F' 1 @1? A 1 ' 1=' GA; 1A61 '9 ;' ?6A @ƒ A @' C<' ;1? ; B=' . <A=B;<=

' C< .<A 1.< A ' A;. ' F . .A @<@ D ' A;=CA6 (<;X11F> CA@
< <;<@ GA1 C<;< 6D<; 1 E A=' 6 ' G;<GA;<@
1 ;1?B<A @ ' 6 ' >'A ?;<A ' B .D<;' 9 G6AF<= DB ' ;A F<A@
@<= ; <@ C< GA 1=C AI '1 ' 1='G ; =' D B ' C<=A .< 1D ; 19#
1.<=1P << ' 61 B=A @ .G<;1A6 ; G=6<@ 1 ' 1F16 'D '
0< <;A6 <;F @; I< C< GA 1A;@='9; .' CA '1=6A @' ;B=C<@ D ' C<=<
B .<; B='; <I<;=<= 6D<; 1 =AE 61A ' C< EA='6 = ' C< LB<< ' B; <@
A?A1 = ' C1 .A @ ' 6 ?<;' =AE A C1 ?1 ' C1=C61 1= <;' DB ' C<
D=FB;1 ' 9 C1='D1; C ' ' IA1 ' C< C;<A < <@ C< ;< FC 0 I<; .< '
1I1 C A ' A661A F< D< E<< ' GA1 ?6A @ A @ B= ;1A ' 1='@1=?;AF<
EA=' ;<= 6I<@ A @ @<.A @<@ D ' C< <?< N A @ 1 ' %<@<.D<;
2 !+C161G 9 ' =1? <@ A @<F;<< EC1FC ;@<;<@ C1.' ' JB1 ' A@;1@
E1 C1 ' <1?C ' @A =' C< G GB6AF< F<6<D;A <@ C1=DA 1=C.< ' A=' C<
@<61I<;A F< 9; .' A ' =F B;?<N A @ C< 9A66 9 C< A;@1 A6 EA=' C<
=<F.;1 ' 9 ;' G<AF<' +C161G =< ' 1 ' C1=A@C<=1 ' ' C< ;<A ' 9 C<
LBA@;BG6< 661A F<A @ 1 ' EA= =1? <@ D ' C1= 1 1= <;' 1 ' <D;BA;
2 "A ' C< A?B<' (' C1=;<A ' C< .G<; ;' CA;6<= ' eAC<=1 ' 9
;< B F<@ C< GA 1=C . A;FC A @+C161G ' ADA @ <@
A66 C< A <=EC1FC D ' C< +<AF< 9 A= A@ CA@ D<< '
=<I<;<@9; .' 1 ' C< .G<; ;' B @<; >' ' D<= E C< = I<;<1? ' 9
B=FA ' ' % ' A;6 =C< = ' 9 +C161G ' A @ 61MAD< C A;BF=<
A9 <;' 61< @<A C EC1FC EA=F =1@<;<@ 1..1 < 9 C< 6A=' 9 C<
<@1F1 ' R(' C< =A .<;<A 1F16 'EA=?1I< ' ' C< B=< 9 B= ;1A
C< %B>< 9 AI ';<F<1I1 ?1 ' <PFCA ?< 9 ;' 1 ' A;@1 1A EC1FC EA=
;A1=<@ ' C< ;A >' 9 A' >1 ?@ .' C< <?< ' E AF <@ A='
A' .<@1A ;' 1 ' C< ; C ' < CA@ A==1= <@ E<@< >1 ?@ .9 ;'
<PCAB= <@ D ' C< ;B1 B=;A=C <== 9 CA;6<= : A @
I<;' EC1FC ;<1? <@ 6;1FA CA ' . A;FC3=1= <; ' <CA= < <@ C< F 0
F6B=1 ' 9 A' G<AF< D< E<< ' C<;' A @ C< MA;' +< <; EC Y 99<;<@ C1=
@AB?C <;'1 ' .A;;1A?< ' C< %B>< @< CA; ;<= C< <?< 3= E1 C 61<
G; =G<F ' 9 =BFF<==1 ' ' C< C; < 9 + 6A @ A ' CA ' 1.< FFBG1<@ D '
-1 ?1 B?B= B=' C< %B>< 9 ;6<A = C E<I<; ;<K<F <@ C1=A661A F< '_
A @ 9 B @ C1.=<69 9 ;' A' 1.< C< A;D1 <;' 9 B; G<' C1=G E<;9B6 1 0
96B< F< EA=GA; 6 ' @B< ' C< <GC<.<;A6 A @ G; @1?1 B= =BFF<== 9 61<
= = <.' <= AD61=C<@ D ' AE EC1FC CAI1 ?1 D<< ' A@ G <@ D ' C< <?< _
_< K <@ C< C1?C<= ' @<?;<< 9 GBD61F 9AI B; A @ G6AF<@ 1..< =<
G<FB 1A; ';<= B;F<=1 ' C< CA @= 9 C< 0 I<; .<

7$# # ' : !>' $' 8* -'

AE3' DA >' CA@' D<< ' @<F6A;<@' C<' A6' (A >' A ' C<' F6 =<' 9' C<' <A;'
2 ' 'CA@' AFJB1;<@' C<' G;1I16<?<=' D<6 ?1 ?' ' C<' 6@'
96AI 1AfE#1B' @1A' . GA ' EC1FC' 1 ' A@@1 1 ' ' IA=' G ==<==1 =' 1
<$B+' ,5, 0,5 ' n' B1=1A A' G ==<==<@' C<' = 6<' ;1?C ' 1' ;A@ . ?' E1 C' 9;1FA'
A @' =1A'N A @' C<' 0 I<; . < ' A6= ' D<= E<@' ' 1 ' C<' . G 6 '1 '
DAFF ' C<' <PF1=<' @B 1<=' 9' 6=A 1?' A @' ;A FC< . W' C<'G; 91 '@<;1IAD6<'
9; .' C<' F 1 A?<' 9' . < ' A @'6A= 6 ' C<' - ' A @' C<' 9A; . =' ?< <;A6 '
=' 91;= 'FA;<' EA=' ' @<G;<F1A <' C<' FB;;< ' F 1 ' D '=BDK<F 1 ?' 1 ' '919 '
F =<FB 1I<' IA;1A 1 =' EC16= '1 =' E ' G <=' A6 <' AGG<A;<@' ' D<' 1 IA;10
AD6<' 1 ' IA6B<' A @' CB=' =BG<;1 ;' ' C<' . < ' IA6B<' EC1FC' C< ';<G;<0
=< <@ " <@' AEA ' D ' AE3' 91;= ' =BFF<==<=' A' F;<@B6 B=' . B6 1 B@<'
GB;FCA=<@' =CA;<=' 1 ' C1=' . GA ' A @' <PFCA ?<@' 1 =' ? 6@' 9 ;' C1=' DA >0
<=' C1=' ? 6@' =<; I<@' ' ;<1 . DB;=<' C<' F;<@1 ;=' 9' C<' A <' A @'
C< ' < . DA;;A==<@' D ' C<1;' FAG1 A6' A @' 9B66' 9' A' D61 @' F 91@< F<' ;<A@16 '
<PFCA ?<@' 1 '1 ' C<1;' B; ' 9 ;' =CA;<=' C<' IA6B<' 9' EC1FC' 1 F;<A=<@' 1 '
G; G ; 1 ' ' C<' B . D<;' 9' GB;FCA=<;=' C<' GBD61F' F;<@B61 ' = '
;<AFC<@' 1 =' C<1?C ' A @' <1?C << ' C B=A @' 61I;<=' E<;<' ?1I< ' 9 ;' A' =CA;<'
C<' ;1?1 A6' IA6B<' 9' EC1FC' EA=' ' . ;<' CA '91I<' CB @;<@' C<' = ;<< '
A . <@' LB1 FA . G 1P' E' AFJB1;<@' A' =CA . <9B6' F<6<D;1 ' D ' D<1 ?' C<'
1? D6<' =F< <' 9' C<' @<A61 ?=' 1 ' C<=<' DA >' =CA;<=' ' EA='
L@?D#><$B+' ?FA @A6 B=' 9 ; B <=' E<;<' A . A==<@' A @' CA
C =<' EC1FC' =<< . <@' C<' . =' = 61@' E<;<' =G<<@16 ' @1==1GA <@' ' EA=' C<;<'
CA '9; .' C<' I<; ' F<66A;=' ' C<' ?A;;< =' 9' C<' C B=<=' E<;<' . A==<@' F 0
9B=<@6 ' ?< C<;' A' . B6 1 B@<' 9' G<;= =' 9' <AFC' =<P' 9' <I<; ' A?<' A @'
<I<; ' F @1 1 ' = 6<6 ' FFBG1<@' 1 ' ;A991F>1 ?' 1 ' C<1;' <=' A @' =CA;<='
; .' C<' . =' @1= A ' G; I1 F<=' A @' <I< '9; .' 9 ;<1? ' 6A @=' F; E@=' ;<0
= ; <@' C1 C<;' A @' C<' EC 6<' A 1 ' 1 ' =C ; ' AGG<A;<@' ' CAI<' D<F . <'
<' IA= 'A; . ' 9' =G<FB6A ;=

C1=' <PF1 < . < ' C E<I<;' =FA @A6 B=' A=' 1 ' EA=' CA@' = . <' 9AI B;AD6<'
<99<F =' C<' ;<CAD161 A 1 ' 9'= ' . BFC' @<F;1<@' GAG<; . < '?AI<' A ' B 0
B=BA6' 1 . GB6=<' ' F . . <;F<' A @' 1 @B= ; 'N C<' A . 1 . ' 9' . A B9AF B;<='
1 F;<A=<@' D ' C;<< 919 C=' A?;1FB6 B;<' A @' C<' ;<A=B; ' E<;<' < ;1FC<@' D '
C<' 1 96BP' 9' = ;A ?<;=' A @' C<' 1 F;<A=<@' F =B . G 1 ' 9' <I<; ' =G<F1<=' 9'
G; @BF<' I<; C1 ?' EA=' <A= ' ' C<' 0 I<; . < ' EC< '1 'CA@' C<' ? 6@'
9' C<' >1 ?@ .' A '1 =' F . . A @' ;< FC' @1G6 . AF ' D<FA . <' @ . 1 A ' A @'
1 =' AI ' EC1FC' 166' 6A <6 ' CA@' F =1= <@' 9' DB ' A' 9<E' I<==<6=' A @'
< ;B= <@' ' C<' B @<' AB;<GA=' EC ' EA=' 6 ' <1?C << ' <A;=' 9

A?<EA=;<= ;<@ A = A 1 EC1FC 1 E B6@ D AD6 G; <F B; F . .<;F< C <?< F A <P<@F 6 1<= C <. C<; F B ; A @ K 1 <@ 1 C =6< 9+;A F<EC1FC EA=F I< <@D C ?61=C C 9 1.@A 1 9 <E ;6<A = C DA >= 9 C 1==1==1GG1@A <=9; .C1= G<;1 @ =<9B6E ;>=E<;<B @<; A>< 1 +;A F<=BFC A=. A 111 ; A@=9A.A? 191F< F<B 16 C< B > E A @ C FA A6 9 A;?1=N 91 11 C C 1I<;=1 9+A;1= 99<;<@A F B;=< 9?;A B1 B=1 = ;BF 1 AE A C G<;1 @1 EC1FC C EA=. ='1 9AI B;;<F<1I<@ C C .A?< 9A66 B; G< C = 9 SA.<= 6A6 #I D C A.< 9 C<IA61<;@< A1 0< ;?<= 61F1 <@C1=9;1< @=C1G A @ AE GA1@C1.B 9 C1= E G F><C G< =1 EC1FC +;A F< CA@F<A=<@ D<= E BG C1. C F . .< F<.< 9 2 "" AE9 B @ C1.=<69A C C<1?C 9 C1=9 ; B <A @ A9 <;CAI1 ?ADKB;<@ C +; <= A 9A1 C EA=. A@< .G ; 66<; 0< <;A6NDB 9; .C1=1.<@A <=C1=9A66 1=G;1 F1GA6<;; ; CA@D<< C CA C<6 ><@BG GAG<; . < A=A G<;9<F <JB1IA6< 9 ; F 1 A @ C< 9A A6 F =<JB< F<= 9 C1= <;; ; CA@D<< A??;AIA <@D C< 1? ;A F< A @ FBG1@1 9 C< 0 I<; <. #V . < AE EA= A66 E<@ ;<?B6A < C< . I<.< = 9 C1= = = <.N A 9;1?C 9B6 .A== 9 <= B 9 A66 G; G ; 1 E1 C C< F 1 9 +;A F<EA= 9AD;1FA <@A @ 6AB FC<@1 F1;FB6A 1 1 =G1 < 9 C1=;<. = ;A F<= A. B <@ C .1 A6 IA6B< 9 .A C B=A @ .1661 =A @1 EA= = G<;F<1I<@E1 C <;; ; CA 1 E B6@D<1.G =0 =1D6< ;<@<<.1 D AF BA6 F 1 _ C< F 91@< F< EC1FC CA@D<< 1 =G1;<@D C< @<F6A;A 1 9 C< <P1=< F< 9? 6@ .1 <=1 C< G6A1 = 9 B1=1A A A @ C< DA >A 9 C< 1==1==1GG1 EA= @1==1GA <@A C =A.< 1.< AE C< CA@ ;<F .=< 9 ; C< GB;G =< 9 D 6=<;1 ?BG C1= J;=<. I1 6< .<C @=EC1FC < @<@1 1 =@<= ;BF 1 +;1IA < G<;= =E<;<G; C1D1 <@ CAI< 1 C<1;G ==<==1 . ;< CA 91I< CB @;<@61I;<=1 ;<A@ . < ; F I<; C<1;? 6@1 G<A;6= ;@1A. @=N A @ 91 A66 C <= 9 A C<;< AGG<A;<@A <@1F EC1FC ;<@BF<@ C< =CA;<=1 C< .GA CA69 C<1;IA6B< ; .C1=. .< A66 166B=1 E1 C ;<=G<F C< .GA EA= A A < @ EA=1 IA1 CA C< %B><@3 1 C< <?< 3=D; C<;1 6AE G; 0 FB;<@ C ;<I FA 1 9 C< @<F;<<N 1 EA=1.G ==1D6< ;<1 =G1;<F 0 91@< F<N A @ AE CAI1 ?D<< A;;<= <@ EA= =1B . <@ ?1I<1 C1= AFF B =EC1FC C< @1@E1 C A A@.1;AD6< F6<A; <== EC1FC F 9 B @<@ C1= < <.1<= C< @1;<F 1 9 C< (A > A @ 9 C< .GA EA=

F;<@1 ' F B6@ CAI< . A@< C< . ' =B= A1) DB ' C<=< . < C @=' E<;< 9 '
AIA16 A @ 1 ' 2 ' C< 0 I<; . < ' CA@ A?A1 ' ;<F B;=< ' C< G<;A 1 '
9 <PA . 1 A 1 ' A=F<; A1 ' C< ;<A6 A . B ' 9 C< A <
@<D A @ C< 1 6<=' 9 1 =' F;<@1 ;=' 1 =' E ;> EA=' A?A1 '
F 91@<@ ' C< (; C<;=' +1;1=' E ' C B=A @ E ' CB @;<@
. 1661 =' E ; C 9 GAG<;' =<F11;1 1<=' E<;< @<G =1 <@ A ' C<1;' @911F<= < '
C1;@ 9 EC1FC EA=' @<F6A;<@ B66 EC16=' C< ;< . A1 @<;' E<;< ;<@BF<@ ' A'
IA6B< . BFC D<6 E' CA ' EC1FC C< ' . 1 A66 'D ;<' C =< FAG1 A61= =' EC '
D= 1 A <6 ' ;< A1 <@ C<1;' <=' A @ D166=' 1 ' C<1;' @<=>=' E1 C B ' A>1 ?'
C< . ' ' D< <PA . 1 <@ 6 = ' 61< EC 6< 9 C<1;' @<D =' C< G; 9<==1 A6
= F>K DD<;= EC ' CA@ . A@< < ; . B=' G; 91 # E<;< I1 6< 6 ' @<G;1I<@ 9
C< 6A;?<;' G ; 1 ' 9 C<1;' ?A1 =' C< @<D =' EC1FC CA@ ' D< 61JB1@A <@
A . B <@ ' =<I< << ' C1 . @;<@ . 1661 = ' A @ C< A < 9 1 . @ 1 =<69 . BFC
. ;< 1 @<D <@ CA ' 1 ' CA@ D<< ' A ' C< @<A C 9 B1=' : &
BFC EA=' C< < @ 9 C1=' 9A . B=' A = < . C< 9A66 9 EC1FC EA=
CA= < <@ . BFC . ;< D ' C< 1? ;A F< A @ @<=G 1= . ' 9 C< 0 I<; . < '
CA ' D ' C< <;; ;=' 9 1 =' 1 I< ;' =' ;<=B6 =' E<;< ' FCA ?< C< GBD61F
. A <;=' A @ C< @1= ;1DB 1 ' 9 E<A6 C ' ;< @<;' C< G< G6< <A?<;' A9 <;'
?A1 ' A @ D 6@ 1 ' =G<FB6A 1 ' 1 1 1A < C< ?< <;A6 B=< 9 DA >= A @ '
?1I< A' <E 619< ' F . . <;F< EC16= ' C< C<;' CA @ 1 ' F 91; . <@ C<
G;<KB@1F<=' 9 C< 0 I<; . < 'A?A1 =' <I<; ' <E 1@<A A @ <I<; 'G; K<F '
9 ;' C< 1 . G; I< . < ' 9 1 =' 91 A F<=
C< G<= 16< F< A ' C1=' 1 . < a 2 " , 2 b' EA=' <P<FB 1 ?' 9;1?C 9B6
;AIA?<=' 1 ' +; I< F<' C< B . D<;' 9 1 =' I1F 1 . =' 1=' B 0
> E)' DB ' C< 9 B;' F1 1<=' 9 A;=<166<= ;6<= 1P A @ +; I< F EA
I@ ' A6 < 6 = ' =<I< 1 < C B=A @ 91I< CB @;<@ 9 '
C<1;' 1 CAD1 A =' (<6MB F C< (1=C G 9 A;=<166<= C< C<IA61<;'
=< A @ C< 6@<; . < ' = <66< A @ B= 1<; 1 . . ; A61M<@ C< . =<6I<=
D ' C< C<; 1= . ' C< ' @1=G6A <@ 1 ' C< . 1@= ' 9 C1=' 9;1?C 9B6 FA6A . 1
' C< . <A 1 . < C< GBD61F . 1=9 ; B <=' D ' ' . <A =' @1 . 1 1=C<@ C<
D1 <; <==' 9 C< C< 6 ?1FA6 @1=GB <=' A;@1 A6 A166<=' EA=
<I<;' C< 9 ;< . =' 9 C< GG < =' 9 C< DB66 1?< 1 B=
9 + G< 6< . < ' : EC1FC C< ;<?A;@<@ A=' A ' A AF>' '
C< 61D<; 1<=' 9 C< 0A661FA ' CB;FCN A @ C< +A;61A . < ' ;<9B=<@ '
;<?1= <;' 1 ' (B ' %BD 1=' D; >< C; B?C 611=' @ BD6< D= AF6<' C1='
F 1FA6 1 ;1?B<; EC ' CA@ A6;<A@ ' CA@ C1 . =<69 . 1 A <@ ' C<
(1=C G;1F 9 A . D;A1 EA=' A . D 1 B=' 9 C< GB;G6< A @ C G<@ '?A1

CA ' +;1 F< C1=' 1;= ' 1 1= <;' B1=' : ' A#< <@' E1 C' A' @' 9' C< C<A@' CB=' 61< 0 I<; . < ' GA==<@' 9; .' C< B=< 9' ;6<A =' ' CA ' 9' @W

61;<< G<;= =' 6 ' F = 1 B <@' C< - 1 ?3=' B F16N' A @' C<=< E<;< C< %B>< 9' (B;D ' C< (1=C G' 9' ;<KB=' A @' A;=CA6' 166A;= ' E . A ' 9' =FA @A6 B=' . A <;=Y' C;' A;F6B <;=' @< +;1<') $+$A<7K' B3'<M@ $ FQ@' C@' 3 ; JB+C$7>$ C< 11' ' 1 1= <;3=' . 1= ;<==' ;B6<@' C1=' A;; E' . 1 @' IC1FC EA=' = BG<91<@' D ' @<DABFC<; ' A @' A ' 1 =A 1AD6< FBG1@1 ' %B I<; < ' C< B ?<= ' 9' C< D; C<;=' +A;1=' EA=' =<6<F <@' D ' C<;' ' A@ . 1 1= <;' A99A1;=' A @' C< %B>< 9' (B;D ' AFF<G <@' A ' C<;' 1 = 1?A 1 ' C1=' 1 1= <;' EC ' EA=' C< AB C ;' 9'= . < E1=< . <A=B;<=' DB ' EA=' A ' C< =A . < 1 . < C< AF0 F . G61F< 1 ' A @' C< 1 = ;B . < ' 9' @1 B=' AF =' 9' I1 6< F< C< 91;= ' 6AE=' . A@<' 1 . @<;' C< AB C ;1 ' 9' C1=' 1 1= ; ' E<;< C$BB '>?<>' B3 <MB'+BS') $+$A<7K' D C' 9 61=C' A @' E1F><@' C< 6<?A6' I A6B< 9' C< F 1 ' EA=' ;<0 @BF<@' ' < CA69' A @' C<;A < 9' 1 <;<= ' ' C< ' ' %B I<; < ' EA=' @< <; . 1 <@' CA ' C< CAD1 =' 9' C< A 1 '=C B6@' I A; 'A=' =G<<@16 ' A=' C< @<F;<<=' 9' C< 1; F ' ; G=' E<;< =< ' '=6AB?C <;' C< +A;1=1A 'E ;>0 . < ' EC ' @<9< @<@' C<1;' EA?<=' N A @' C< =C G=' 9'' 61 =< ;A@<= . < ' EC ' E B6@' ' . A>< C<1;' G;1F<=' AFF ;@' E1 C' C< FCA ?< 1 ' C< I A6B< h0 . < ' E<;< EA66<@' BG ' 9 <;' A' 1 . < C< @1=A= ; B=' <99<F =' 9' C1=' . <A=PB;< E<;< G<;F<1I<@' A @' A9 <;' CA I1 ?' G6B ?<@' 61< >1 ?@ .' 1 ' F 9B=1 '1 ' EA=' ;<G<A6<@' ;A F< A6= ' =B99<;<@' A ' C1=' G<;1 @' A @' 9 ;' 61< 6A= ' 1 . <' B @<;' C< ?;1<I B=' AP' 9' # '5 ' ' ,' # '& $ ' -- !' EC1FC' C< %B>< 9' ;6<A =' CA@' E1=<6 ' @<F61 <@' '6<I ' A @' EC1FC' EA=' 9A; . <@' B '9 ;' E< C;<< . 1661 =' ' GA1@' A6= ' D<=1@<=' 1 =' 1 B . <;AD6< C<;' DB;@< =' E ' G<;' F< ' A66' C< G; @BF 1 =' 9' C< = 16' ' EA=' 9; .' C< . 1@=' 9' C< ;B1 B=' 9s <=' 9' CA 166 ' C< D;1661A ' ;<=1@< F< 9' C< @<=' CA ' E<;< 1==B<@' C<=< <@1F =' 9' =G 61A 1 'N A @' 1 ' EA=' 9; .' C< F< A6= ' CA ' E< ' 9 ; C' DA;DA; B=' 6AE=' A?A1 =' C< +; <= A =' C<=< 6AE=' A==B . <@' A=' ;B<' A=' @1@' C< <@1F =' 9' B1=' : ' C< 6 1 ?' IBGG =1 1 ' 61 N' C<;< E<;< ' . ;< +; <= A =' 1 ' ;A F<' A @' F =<0 JB< 6 ' ;<A <@' A=' G<; I<; =' A66' EC ' E<;< F I1F <@' 9' C<;<= ' C< ' D;A @<@' . A;;1A?<=' D< E<< ' A6I1 1= =' AB C ;1M<@' C< =<1MB;< 9' C<1;' FC16@;< ' @<G;1I<@' C< .' 9' C< ;1?C =' 9' =BFF<==1 ' A @' E1 C' ;<=G<F ' ' C< . ' GB 1=C<@' E1 C' @<A C' A @' C< ?A66< =' 961?C ' C =G1 A61 ' A @' C< . =' ?< <; B=' AF 1 =' C<=< 6AE=' =B;GA==<@' <I< ' 1 ' F;B<6 ' C =< 9' C< 6A < - 1 ?' N 9 ;' C< ' G; C1D1 <@' C< 1 <;I< 1 ' 9' C< 991F<;=' 9

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KB= 1F<& A @' @<61I<;<@' I<;' C<' A6I1 1= =' A=' I1F 1 . =' ' C<' @1=F;< 1 ' 9' C<1;' < < . 1<=' 5 5 ' 5

C<' E ' . 1I<=' 9' C<' AF 1 =' 9' C<' %B><' 9'(B;D 'E<;<' AIA;1F<' A @' A . D1 1 ' 'EA=' 9 ;' C<' =A><' 9'C1=' E '9 ; B <' CA ' C<' =BGG ; <@' C<' @1A' . GA & EC1FC' CA@' D<< ' =<I<;<6 ' =CA>< ' D ' C<' 9A66' 9' AE& A @' 1 ' EC1FC' C<' G ==<==<@' A' ?;<A ' B . D<;' 9' =CA;<=' N A @' 1 ;' EA=' 9; . ' A' K<A6 B=' CA ;<@' 9' C<' B=<' 9' ;6<A =& A @' C<' 9<A;' CA '1 ' . 1?C ' =BFF<<@' ' C<' ; E & 19' C<' - 1 ?' =C B6@' @1<' E1 C B ' A' @1;<F ' C<1;& CA ' C<' D; >< 99' C<' . A;;1A?<' EC1FC' CA@' D<< ' G; K<F <@' D< E<< & C<' - 1 ?' A @' A' + ;1 ' ' ' F<==' 9' < @<;' A?<' <' =< ' DAF>' CW' 1A A' ' GA1 & =BD 9:';' ' &' H#e #' = 1 B 1 ?'9 ;'C<;' A;1A']FM1 =>1& C<' @AB?C <;' 9' A 1=6AB=& 6< 1 . =E& 2 7' 9 ; . <;6 'F; E <@'>1 ?' 9'+ 6A @' D 'h C ;6M=' : & A @' EC & = ;1GG<@' 9'C1=' ; A6' = A <& 61I<@' 1 ' D=FB;1 ' A ' <1==<. D<;? ' R 5 ' C1=' A99; ' EA=' >< 6 '9<6 '1 ' GA1 ' C<' E<A>' +C161G' & A' I1F 1 A' ' C<' A;; E<=' =F;BG6<=' 9' F =F1< F<& A @' C<' . <;< 6' 9 'C1=' F ' 5: <'=' 7 ;' 9F== ;=& CA@' AD@1FA <@' C<' C; <' 1 ' C<' G;<F<@1 ?& <A;& 1 ' 9 > ? ? : ' AFF ;@A F<' E1 C' C<' 1 = 1?A 1 =' 9'C1=' F 9<== ;& C<' S<=B1 ' % # ' ' (<; . B@<M' 1=' = & =1P << ' <A;=' ' A?<& =BFF<<@<@' C1 . ' D ' C<' A . <' 9' B1=' & A @' @1<@' 9' C<' = . A66 G P' A9 <;' A' ;<1? ' EC1FC' CA@' 6 '6A= <@' =<I< ' . C=' 9'+C161G' @1@' ';<#A=F< @' C1=' C; <' C1=' F; E ' E B6@& & E' @<I 6I<' BG 'C1=' =<F @' =* &' <;@1 A @& EC ' EA=' < ' <A;=' 9'A?<& EC16=' A' <?< F & F . G =<@' 9'?;A @<<=' 9' GA1 & E B6@' ? I<; ' C<' >1 ?@ . ' C<' B;' 9' ;A F<';<?A;@<@' =BFC' A 'A;;A ?< . < ' E1 C' '9AI B;& A @' 1 = ;BF <@' 1 =' A . DA==A@ ;' A;=CA6' <==]& ' B=<' A66' C1=' 1 96B< F<' '1 @BF<' C<' - 1 ?' ';<I ><' C1=' AD@1FA 1 ' C< 6 ?1A =& EC ' E<;<' FA66<@' 1 ' ' F . DA ' C<' A;?B . < =' 9' (<; . 11@<MK' @<F1@<K' CA ' C<' - 1 ?' B?C ' ';<=B . <' C<' =F<G ;<' B @<A' G # ' 9'#F . . 1 1 ?' A' . ; A6' =1 ' AB;A' +<=FA ;1& C1=' . B =<& ?AI<' 61< . ' 1 . G ; A ' A==1= A F<' D ' C<' D 6@ <==' 9'C<;' 6A ?BA?<' N A @' A '6< ? C' +C161G& ' ' C<' * C' , 9' <G < . D<;& 2 & F =< <@' ';<=B . <' C1=' F<G ;<' '9<E' . CZ'#6A#<13& C<' 6<A; ' C<' ;BG B;<' 9' C<' G; K<F <@' . A;;1A?<' D< E<< ' 911=' @AB?C <;' G @' B1=' : ' C1=' <E=' C1=' A ?<;' EA=' <P ;< . <' N A @' C<' 1 . . <@1A <6 ' =< ' AEA ' C<' E ' @AB?C <;=' 9' C<' <?< & <' 9' EC . ' EA=' C<' E1@ E' 9' C<' B ?' - 1 ?' B1=' & EC16=' C<' C<;& A@< . 1=<66<' @<' (<ABK 6A1=& CA@' D<< ' 1 < @<@' 'D<' C<' E19<' 9' C<' 9A '% ' A;6 =' C1=# EA=' '61 6<' ' =A 1=9 'C1=' I< ?<A F<' N A @' <' 9'C1=' < . 1==A;1<=& C<' A@I< B;<;' 1GG<;@A& P F6 1@<@' 1 'C1=' A . <' A' ;<A ' E1 C' C<' . G<; ;' O61A;6<=' & EC ' EA=

1; ;1 A <@' A ' C<' D= AF6<=' 61; I ' 1 'C1=' EA 'D ' C<' + E<;=' ' C<' <= AD61=C0 . < ' 9' C<' ,. GA? 1<',@3 = < @<&' A @' 1 'Ç1=' G;A . A 1F'=A < ' 7> : ><#?' A>+@0 1 &' A' 6AE' D 'EC1FC&' 1 ' @<9AB6 5 9' 6<AI1 ?3 . A6<' FC16@;< & G<; ;' CA;1<= 1 C<' AGG 1 <@' C1=' @AB?C <;' A;1A C<;<=A' ' =BFF<<@' C1 . ' 6A; . <@' A C1=&' ;<A & +;A F<& ?6A @& A @' +;B==1A' A? <@& 1 & 2 7& CA ' 9' A I<;& C<' DA=1=' & 9'&E FC' EA=' A' <B ;A6 ?BA;A <<' A @' A661A F<

C<' . . < 'EA=' @;AE1 ?' <A;'EC< '+C161G'E B6@' DD'AD6<' 'AI< ?<' C<' 1 =B6 ' 'C1=' 9A . 16 ' C<' %B><' 9' (B;D &< @<AI B;<@' ';<6<A=<' C1 . 0 =<69'9; .' C<Q1 . G B A W'F< =B;<=' 9' C<' (1=C G' 9' ;<K]'& A @' CA@' G;<0 IA16<@"BG ' C<' B ?' - 1 ?' 'A==1='C1 . '1 ' C1=' @<=1? ' ' C<' . <A 1 . <' C<' . 1=<; ' 9' C<' G< KS6<' EA=' <P ;< . <') 1 '<I<; ' @1;<F 1 ' B F;1<=' E<;<' C<A;@3A?A1@=' C<'0 I<; . < & A @' +6< . 'EA=' < ;B= <@' ' GB ' A '< @' ' C<' GBD61F' . 1=9 ; B <=N' C<' B 1I<;=A6'F6A . B;'EA=' C<A;@&' A @' A' . 1 1=' <; . 6' ;< 6@ 1 '1EA=' <99<F <@' ' C<' C' @1 . <&' C<' B ?' - 1 ?& A=' C<' EA=' '=< 1 ?' B Y' 9 ;Y' C<' FCA=<&' =A1@' ' C<' %B><&' E1 C' A' ?;AF1 B=' = . 16<&' [' B=1 & @ ' ' ' . A><' . <' EA1 ' =BGG<;&'\ A @' A' 9<E' . 1 B <=' A9 <;EA;@=' C< % 1><' 9' CA; = ' @<61 H <;<@' ' C1 . & ' C<' GA; ' 9' C<' A;FC&' A' 9 ; . A6' 6< <;&' EC1FC' F . . A 1@<@' Ç1 . ' ';< 1;<' ' CA 166 ' C< +;' . F<' 1 . . <@1A <6 ' @DA <@&' A @' C<' +A;1=1A =';<F<1I<@' C<' %#@<(B;D A& C<1I=' 9'C1=' 9A66' E1 C' 1 <PG;<==1D6<' ;A =G ; =' C<' D; C<;= +T;1=' E<;<' @1= . 1==<@N' %BI<; < 'EA=' =CB 'BG'1 ' C<' (A= 16<N' C<' A;JB1=<' @< +;1<' EA1=' P16<@ ' C<' - 1 ?' @<F6A;<@' CA 'C< F<9 ; C'C<' E B6@' CAI<' ' 1;= 1 1= <;&' A @' E B6@' C 6@' C<' ;<1 =' 9'? I<; . < '1 'C1=' E 'CA @=N' A @ <MDA' <; . 1 A <@' CW' 1< <A;=' @B;1 ?' EC1FC' EA=' G; 6 ?<@' C<' GBG1 A?< 9' B1=' : 'B @<;' C<3C<A@=& 9' C<' ;1I ' F 66A <;A6' D;A FC<=' 9' C1=' B=< ' CW' . 1@=' 9' C]' I1 6<#6F<& C<' =FA @A6=& A @' C<' FA6A . 1 1<=' EC1FC' @1= 1 ?B1=C<@' C1=' G<;1 @&' A'9<E' E1=<' . <A= B<=' E<;<' A@ G <@&' A @' . A ' B=<91@' E ;>=' '1 . @<; A>W ' ' 6BI<; < ' EA=' C<' ;<A6'9 B @<;' 9' C<' A 1 A6' 1C 1A&3EC1F6# A=' G= ID11=C<@' D 'C1 . ' 'A '<PF<66< '9 1 ?& A @' ;A1=<@' #' =1P ' C B=A @' . < & EC ' E<;<' =<6<F <@' D ' 6 ' C<' G< G6<' A6=C' E<;<' ;<C<I<@' 9; .' C<' DB;@< ' 9' 1A1 A1 1 ?' C<' ; G='1 " C<1;' E 'C B=<=& <A;6 '91I<' CB @;<@' DA;;AF>=' D<1 ?' F = ;BF <@' 1 ' C1=' =C ;' G<;1 @' C<' <?< F 'G6A <@' A' IA=' A @' =G6< @1@' = = < .' 9' ; A@=& C<' FA;; 1 ?' B ' 9' EC1FC' 1 ' F 91@<@' ' A' =G<F1A6' F . . 1==1 N' A @' A6= ' =BGG ; <@' C<' GC16A C; G1F' A1 . =' 9' C<' 166B= ;1 B=' A C<;' %<6A=A66<&' C<'9 B @<;' 9' C<' C;1= 1A ' =FC 6= M7$A<$>+' A?MBB#A

8 ' ' '

! 9$ u t

p G#$! <0 u 0" $$ c)))) v p &

2 * 272

3 (& : CA@ D<< D ; E1 C A = ; ? # 1GA C 9 ; G . G A @ =C E A @ #=G6A <@ 9; . C1= < @<;<= <A;= A <PF6B=1 < A= < 9 ; @1< @< A16= 9 G;1 A < 619< 6<B1 C1= G;<F<G ; > GA1 = ?A1 C1= F 91@< F< D A <P ;< . < 1 @B6?< F< A @ A @1< =A . < 1 . < < @<A B;<@ =<FB;< 9 ; C1 . =<69 A 6 ? A=F< @A F I<; C1 . D ><<G1 ? C1 . AGA; 9; . <I<; 1 96B< F< CA F B6@ @<IA6B< C1= . 1 @ A @ = B6 C< B ? - 1 ?3= = B@1<= A= E<66 A= C1= A . B=< . < =Y E<;< FA6FB6A <@ CA;@< C1= C<A; A @ F ;1DB <@ A= . BFC A= C< A B;A6 F 6@ <== 9 C1= @1=G =1 1 ;< @<; C1 . A B ?;AF1 B= . A= <; C< <?< FA;<9B6 ;< A1 A AD= 6B < 1 96B< F< I<; C1= G 11116 A9 <; C< CA@ A A1 <@ C1= . AK ;1 61A@ @1= . 1==<@ C1= ? I<; ; A;=CA6 166<; 1 EC EA= A D= 1 A < A @ I1 0 6< . A C< (1=C G 9 ;<KB= . ;< F . G61A A @ A@; 1 1 =G1;<@ C< +;1 F< E1 C 6<== @1= ;B= A @ ;< A1 <@ C1= G = <A;; C< B ? A;FC EC . C< = ;BF <@ E1 C G; 9 B @ @1==1 . B6A 1 A @ 1 EC =< ? @ ? . F<= C<1 =1 BA <@ C1 . =<69 . ;<@<<G6 @A D @A <CA@ D; B?C C1= B ? FCA;?< A 6A= =<< 6 E1 C C1= < <= A @ @ 6 ECA C< @1F A <@N A @ EC< C<;<9 ;< B1= : @<F6A;<@ A9 <; C< @1=?;AF< 9 C< %B>< 9 (1B D B CA C< E B6@ CA I< 1;= # 1 1= <; A @ 6<B; EA= . A@< A A;@1 A6 1 . 1?C <A=16 D< 9 ;<=<< CA C< 6A <; 1 =G1 < 9 C1= =<I< C;<< <A;= E B6@ ;B6< C< ?>7C$+F$ #@D7K A <A @ <P<;F1=< 1 ;<A61 C< A6 G E'<; < 9 611= 1.<<; 2 * 91;= AF = EA= AD 61=C C< AP 9 C< 919 1< C A @ 91P C< IA6B< 9 C< =16 I<; . A;> A 919 < 61 I ;<= 9; . EC1FC 1 CA= =1 F< DB =61?C 6 IA;1<@

I M@ 3>GBD7$<@ > ; DA@ ; @+<A B BD$A " SB7@ > ; @A B ?>7CA >+C ?7D@# MD+<$+ ALB7<A $+ #>7 @ M>##A SM@7@ J$7CA B L7@K #>D+?M@C > ; $CA <MBDA>+CA B AL>77BSA ; >$QA >M$C@BDA A#>D M<@7 % @ ; B+<@K P ,# -

<' EA=' A P1 B=' A6= ' ' FA; ; ' B ' = . <' E1=<' <F 1 1FA6' G6A =(' DB ' D<1 ?# A66 ' 1? ;A ' 9' 91 A F1A6' A99A1;=(' C<' 1 961F <@' A' @A ?<; B=' D6 E' ' GBD61F' F;<@1 ' D ' A;D1 ;A;16 '@1 . 1 1=C1 ?' C<'619<' A I@ 1<=' C<' A1'@1 A6 ' 1 1= <;' B=<@' C1=' B . = ' < @<AI B;=' ' . A1 A1 ' G<AF<' ' ?< <;A6' F 0 ?;<==' EA=' G< <@' A ' 1== =' 1 ' 2 (' DB ' EA=' @1== 6I<@' 1 ' C<' 9 66 E1 ?' <A;' I1 C B ' CAI1 ?' AFC1<I<@' A ' G;AF 1FA6' ;<=B6 ' C16= ' C<' @<GB 1<=' 7>+?@' D>7>+0' =<I<;A6'+ E<;=' XI<;<' @1=F B;=1 ?' 6<1 ; ' EA=' <? 1A <Y .#3; ;Qv# C1? ' <' 9 ; . <@' A ' A661A F<' D< E<< ' GA1 ' A @' ;A F<(' A @(L7> ; ><$? ' ,52, ' 28 (' 9;<=C' ;<A 1<=(' 5< <;<@' 1 ' A ' 1< A' D< E<< +;A F<(' C<' . G<; ;(' GA1 (' A @' 66A @(' ?BA;A <<@' ' CA;6<=' ' C<' <P<FB 1 ' 9' C1=' G;A? . A 1F' 1 ' 9AI B;' 9' C1=' @AB?C <;N ' % ' A;6 =(' C<' G ==<==1 ' 9' C<' @BFC1<=' 9' +A; . A' A @' +1AF<;1MA(' A @' C<6 =BFF<==1 ' ' B=FA ' (' C< . ' A6= ' C<' . G<; ;' G; . 1=<@' ' ;<I ><' C<' G;1I16<?<=' AFF ;@<@' ' C<' = < @' . GA

B; G<' EA=' A ' G<AF<(' DB ' C<' . 1=<;AD6<' JBA; ;<6' D< E<< ' C<' SA =< 1= A' 4' ' A @' 61 1= =' F 1 B<@' ' =FA @A61M<' +A;1=(' A @(' 1 '9AF (' A66 ;<MA(2"! 28 ' ;A F<' 6<B; 'FAB=<@' C<' . << 1 ?' 9' A' B F16' A ' . D . (' D<9 ;<' EC1FC' EA=' F1 <@' A @' F @< . <@' S<A ' A < (' <' 9' C<' 9 B;' 6A=' D1=C G=' EC ' F 1 B<@' ' GG =<' C<' DB66' 1?< . B=' ;<=C' ; BD6<=' E<;<' <PF1 <@' D ' C<' 1 6<;A ' M<A6' 9' ' @<' 1 1 . 166<(' EC ' =BFF<<@<@' A;@1 A6' A1 <=' A=' ;FCD1=C G' 9' +A;1=' ' @1=GB <' A; =<' D< E<< ' C1 . ' A @' C<' F ;G=' 9' A@I FA <=(' EC ' C< 'A==B . <@' C<' 1 6<' 9' ;@<;(' A @' =BG0 G ; <@' C<' +A;61A . < ' C<' - 1 ?' ;<9B=<@' ' C<A;' C<' . A?1= ;A <=(' A @' . A ' 9' C< . ' E<;<' <P16<@(' A @' C< ' ;<FA66<@(' E1 C B ' A ' @<F1=1I<' ;<=B6 ' ' <1 C<;' GA; ' C<' SA =< 1= =(' 1B' C1=' 61 6<' EA;' = ' 9A A6' ' C<' CB;FC(< @<AI B;<@' ' =BGG ; ' C<1;(' FAB=<' D ' = ;A ?<'=F< <=(' 9' EC1FC' C<' F< . < <; ' 9' A1 ' W@A;@'EA=' C<' C<A ;<' 'SA =< 1= ' @<AF (' A . <@'+A;1=(' CAI1 ?' D<< ' DB;1<@' C<;<' 1 ' 2 2(' EA=' G;< FA 1M<@' A=' A' =A1 (' A @' AH ;<G ; ' EA=' =G;<A@' AD; A@' CA ' . 1;AF6<=' E<;<' E ;><@' A ' C1=' . D' ; E@=' F =<JB< 6 ';<= ; <@' '1 (' A @' AIA= ' B . D<;' 9' =1F>' G<;= =' <PG<;1< F<@' A '1 ' <P ;A ;@1 A; '=< =A 1 =' ' AGG<A;=(' 1 @<<@(G;< 'F<; A1 ' CA ' C<' F A?1 ' 9' = . GA C ' A @' C<' <PF1 < . < ' 9' C<' 1 . A?1 A 1 ' G; @BF<@' AF BA6' <99<F =' [' '1=' C<' E ;>' 9' 0 @z~' G;1<@' = . <' [' '1=' C<' E ;>' 9' C<' @<I 166~' <PF6A1 . <@' C<;=' C<' 1 F;<@B6 B=' @;<E' 9; . ' C1=' F1;FB . 0 = A F<' 9;<=C' E<AG =' A?A1 =' C<' 9A1 C(A @' A ' 6< ? C' C<' ;FCD1=C G' G; C1D1 <@' A ' GBD61F' C . A?<' ' %<AF ' '+A;1=(' ' C<' ?; B @' CA ' C<' EA=' ' FA 1M<@' C<' A@I FA <=' AGGWA6<@' 9; .' C1=' @<F1=1 ' A=' A@

ADB=< 9G E<;A @ C< +A;61A . < A@ . 1 <@ C< KB= 1F< 9 C<1; AGG<A6
C< <PF1 < . < C< =BDK<F E ; =< 1 =B . = C<1?C N C< F< . <0
<; D<FA . < C< ?< <; A6 ;< @<MI B= 9 C< . B6 1 B@<EC C ; ?<@ 1 A
A C B; =1 =BFC A B . B6 B B= . A <; CA A 6< ? C C< 0 I<; . < CA@
F6 =< 1
=G1 < 9 C< <99 ; = 9 A;@1 A6 6<B; G<AF< EA= D; >< 1 F =<0
JB< F< 9 C< @<A C 9 B?B= B= 6<F ; 9 AP A @
-1 ? 9 + 6A @ 1 2"8 C1= +;1 F<9A . B= 9 ; C1= G;
@1?1 B= @<DABFC<;1<=CA@ D<< ;A1=<'@ C< C; < 9 + 6A @ EC<
CA;6<= : CA@ F<A=<@ . A1 A1 1 A 1=6AB= <F i =6@ C<
6A <;9A 61<; 1 6AE B1= : E F F<1I<@ C< C G< 9;<F I<;1 ?
C< =F<G ;< EC1FC C< CA@ 6 = < G; F<<@<@ 1 @1=?B1=< A;=AE
A @ EA= 1 . . <@1A <6 G; F6A1 . <@ >1 ? C<;< (B C< 1 . @< B 1FC
EA= =< 1 + 6A @ D C< MA;1 A A IA I A C< 1<F< 9 +< <;
C< 0 ;<A A @ C< C<1;<== 9 C1= C; <N A @ C< 1 . FAB=<@ C< <6<F0
1 9 ;<@<;1F> B?B= B= C< = 9 B?B= B= C1= +;1 F<
?BA;A <<@ C< G;A? . A 1F 9 CA;6<= EC A=i= <@ C1 . E1 C ; G=N
EC16= ;A F< F B6@ 6 A==1= A 1=6AB=D<=1<?<@ D C< B=iA = A
%A M1?E1 C 919 << CB @;<@ ;< FC = 6@1<;= C<1; =BGG ; G; I<@ DB
B=<6<==N 1 =G1 < 9 C<C<; 1= . 9 B @< +n<6 EC G<;1=C<@A C<1; C<A@
%A M1? FAG1 B6A <@A @ A 1=6AB=BG EC =< C<A@ A G;1F<
EA= =< <=FAG<@ C; B?C C< . 1@= 9 A C 1=A @ G<;16= >7 3B7 B#>+C
B1= I< ?<@ C1 . =<69 C< . G<; ; D =<1M1 ? ; ;A1 < < <
A6= 9 ; . <@ A A661A F< E1 C GA1 A @ AI C< C; < 9 EC1FC
CA@ D<< AD@1FA <@ D 1F ; . A@<B=A @ EA= E G ==<==<@ D C1= =
CA;6<= . . A B<6 (<; E1F> A @ 166A; =6<@ A; . 1<= 1 0<; . A
A @ A6 (<; E1F> > C< 9 ; ;<== 9 - <C6 A @ 16A 9<66 D<9 ;< C<
A; . = 9 1LA;= C< F B;=< 9 C< 9 66 E1 ? <A; C< FA;<<;= 9 C<=<
E 166B= ;1 B= ?< <; A6= FA . < A F6 =<
C< %B>< 9 A1 <= A @ C< A; JB1= 9 =9<6@ ;<G6AF<@ (<; E1F>
EC16= A; =CA6 1? A @ C< B @< (; ?61< =BFF<<@<@ 166A; =1 C<
F . . A @ 9 C< A; . 9 A6 C< E (<66< =6<= ?; A @= = 9 C<
9A . B=Q BJB< A @ C< B AP1;1F< 9 AP A A B; A6 = 9
B?B= B= -1 ? 9 + 6A @ =<; I<@ 1 C< A; . 9 C< %B>< 9 A1 <=
EC CA@ 9 ; A GG < +;1 F< B?< <B @<; EC . =<; I<@ C< +;1 F<
A6 9 +; B==1A C< E< < <A; = 9 A?<EC A9 <; EA; @= D<FA . <
1'; <@<; 1F> C< 0; <A % A1 6 = C< = 9 +C161G A @ 61MAD< C A;

8*' ' +' ;< ' ' ' '

<=<&' =<1M<@' AG6<=' A @' 1F16 N A @' C<' ;< FC' '; G1 K'F . . A @<@' C ' (1 ' 9'+A; .A' A;JB1=' 9' =9<6@&' >' +C161=D B;?'1 ' C<'& *; '9AF<' 9 ;<A#'#Y#' +;1 F<' B?< <' C<=<' =BFF<==<=' E<;<'9 E<@C 4' C<' DA 6<' $@++>' ./ #' o1' +A; . A&' 1 ' EC1FC' 1? ' EA=&' C<' I1G G;K' A @' CA ' 9' OBA= A66A&' EC1FC' EA=' E ' D ' A;=CA6' (; ?61<' C<' #FF'G; G =<@'1 ' +;A <'AFJB1;<A' +;1 F<' B?< <'@1<@&' EA=' F F6B@<@' ' C<'9 6 . Q@BFC#6 6 E1 ?'F @1 1 =' A 1=6AB=';< B F<@' C<' C; ;1< 9+ 6A @&' (A;&' 28 ' ;<F<1I1 ?' 1 ' <PFCA ?<' C<' @BFC1<=' 9' ;;A1 <' A @' (A;&' EC1FC' E<;<' ';<I<; ' ' ;A F<' C<'%B><' 9' ;;A1 <&' ;A F1=' 1< <'&' ;<F<1I1 ?' 1 ' C1=' B; &'1 ' <PFCA ?<' 9 ;' C =<' @BFC1<=&' CA ' 9' B=FA ' % ' A;6 =&' ;< B F1 ?'C1=' F6A1 . ' ' AG6<=' A @' 1F16 &' D A1 <@'9; .' C<' . G<; ;' AG6<=' A @' 1F16 &' EC< ' C<' EA=' F; 'E <@' -1 ?Y' CA;6<=' ' ;<=B . <@' G ==<==1 ' 9' 16A '&A @' A BA&' A @' ;A F<' 9 ; . A66 'AFF<G <@' C1=' G;A? . A 1F&' = 6< . 6 '< ?A?1 ?' '@<9< @'1 'A?A1 = 'A66' C1=' ;<A 'EA=' ' =1? <@' B 16' 28 &' A @' EA=' ' A?;<<@' ' D ' GA1 ' 16' 28!'Y 9) @ ' , , %B;1 ?' C<=<' <? 1A 1 =' ?;<A ' @1= B;DA F<=' D; ><' B '1 ' % A C<'1=6A @' 9' ;=1FA&' C< 'G ==<==<@'D ' C<' 0< <=<&' EC1FC' 6<@' ' 1 =' A <PA 1 ' ' ;A F<' C<' F;B<6' ;A ' 9' C<' 0< <=<' ;A1=<@'A';<I 6'1 ' C1=' 1=6A @&' A @'A' 0<; . A 'A@I< B;<;&' (A; 'I ' <BC 99&' F ;1I<@' 'CAI<' C1 . =<69' G; F6A1 . <@' >1 ?' C<;<&' A @' ;<1? <@'9 ;' = . <' . C=' B @<;' C<' 1 6<' 9' - 1 ?' C< @ ;<' %;1I< &' C E<I<;&' D 'A' < . G<=' 1 ' C<' (A ' 9' AG6<=&' C<' EA=' . A@<' >1 ?' C<;<N A @' C< ' C<' ;=1FA =' AGG<A6<@' 9 ;' A==1= A F<' ' C<' ;< FC&' EC ' 1 IA@<@' C<' 1=6A @&' A @' = ' A9 <;EA;@=' <IAFBA <@'1 'E1 C B 'CAI1 ?' @<;1I<@' A 'A@IA A?<' 9; .' C<1;' <PG<@1 1 ' 5

C<' . G<; ;' CA;6<= @1<@1 ' 2 "&1 C<'F 91@< 'C G<' CA 'C1=' G;A? ' D7BL@>+'S>7' ?BA;A <<@'A=1 'EA=' D 'A66' C<' G E<;=&' E B6@'D<'FA; ;1<@ 1BFF =1 &YY [' @AB?C <;&' A;1A C<;<=A&' LB<< ' 9' B ?A; & 2" 2 ' E B6@'1 C<;1 'C1=' A <' (B 'C<' CA@' =FA;F<6 'F6 =<@' C1=' < <=' EC< 'A' F; E@' 9' G;1 F<=' GB '9 ;EA;@' G;< < =1 =' ' C1=' IA=' G ==<==1 11=&' A @' I<;191<@' C<' ;< . A;>' . A@<' D ' +;1 F<' B?< <' CA ' ['1 '=BFC' A' FA=<' C<'' D<= '?BA;A <<' E B6@'D<'A 'A . ' 9'A'CB @;<@' C B=A @' . < ` 7@<@+C@7A . ?= ' C<=<' G;1 F<=' C<' 9 ;< . =' E<; K' CA;6<=' 6D<; &' 61<' 6<F ;' 9' (AIA;1A&' A @' C<' 6<F ;' 9' AP &' B?B= B=' &' EC ' F6A1 . <@' C<' EC 6<'1 C<;1 A F<&' C<' 'A=' C<' @<=F< @A 'G9'A' @AB?C <;' 9' <;@1 A @' &' A @' C<' C<;' A=' C<' CB=DA @' 9' C<' <6@<= ' @AB?C <;' 9' C<;' . G<; ;' S =<GC ' C<' - 1 ?' 9' GA1 &' +C161G' &' ;<I1I<@' AD= 6B <' F6A1 . =

' C<#>K ?@ 1=' 9' B ?A; 'A @' (C< . 1A&' 1 ' C<' C G<' 9' C<;<D ' D<1 ?' < AD6<@' 'DA;?A1 '9 ;' <= AD61=C . < =' 1 ' A6 '9 ;' C<' FC16@;< ' C<' CA@' D ' C1=' =<F @' #E19F& # 61MAD< C' A; <=<' C<' - 1 ?' 9' A;@1 1A&' CA;6<=' . . A B<6&" F6A1 . <@' C<' @BFC ' 9' 16A 'N A @' 91 A66 &' ;<@<;1F>' &' - 1 ?' 9' +9B==1 &'=G ?C ' ' D A1 4 16<=1A&' EC1FC' D<6 ?<@&' C<'=A1@&' D ' C<' ;1?C ' 9';<I<h=1p &' ' C ' 6<F ;=' 9' (;A @< D B;?' + ==<==<@' 9'A' 9B66' ;<A=B; &' C<3FAG A1 ' 9'A' B . <; B=' A @'E<66 @1=F1G61 <@' A; . &' A @'= ; ?' 1 ' C1=' ?< 1B=&' ;<@<;1F>' 91;= ' 9' A66' 6AB FC<@' C1=' DA A61 =' 11 BG ' C1=' G; I1 F<&' A1 @' C< ' DA@<' A;1A C<;<=A' =B; ' 'ZH[& ;< @<;' 1 ' ' C1 . &' G; . 1=1 ?' C<;&' 1 ' FA=<' =C<' F . G61<@&' 'A99 ;@' C<;' C1=' =BGG ; ' A;1A C<;<=A' ;<9B=<@&' A @' ;<@<;1F>' C<;<BG ' >' (;<=6AB&' ?A1 <@' 1 ' 2 ' C<' DA 6<' 9' C I1 M&' A @' ;<@BF<@' C<' ?;<A <;' GA; ' 9' 16<=1A' ' BDK<F 1

;A F<' CA@' ' < '@<F6A;<@' 1 =<69 ' 'EA=' = 6< . 6 ' < ?A?<@' '=BGG ; ' C<' G;A? . A 1F' 9' CA;6<=' &' DB ' B1=' : &' < 1;<6 ' FFBG1<@' E1 C' C1=' G6<A=B;<=&' A @' A;@1 A6' 6<B; &' < 9<<D6<@' D 'A?<&' A @' CA I1 ?' I<; '9<E' =F;BG6<=' E1 C' ;<=G<F ' ' C<' 9A1 C' @B<' ' ;<A 1<=&' CA@' A66 E<@' 61<' A . D1 1 B=' B '@<' (<66<' =6<' ' oD A1 ' C<' FC1<9' 1 96B< F<' 1 ' C<' B F16' C<' 6A <;' GB '9 ;EA;@' C<' 6@' 9<A;' 6<= ' C<' B=<' 9' B= ;1A'=C B6@' D<F . <' 'G E<;9B6&' A @' C<' - 1 ?3=' B F16' @<I1=<@' A' =CA . <9B6' =BD <;9B?<' D ' EC1FC' 1 ' . 1?C ';<F F16<' C = 16<' G; K<F =' E1 C' 1 =' < ?A?< . < =' '@1@' ' @<F6A;<' EA;' @1;<F 6 'A?A1 = ' C<' @AB?61 <;' 9' CA;6<=' &' DB '1 ' F F6B@<@' A' ;<A 'E1 C' C<' 6<F ;' 9' (AIA;1A&' C<' G;1 F1GA6' F6A1 . A ' ' C<'=BFF<==1 ' 9' CA;6<=' A @' C]' . G<;1A6' F; #I ' GA1 &' EC1FC' F I< <@' C<' B= ;1A ' G ==<==1 =' 1 ' A6 &' < <;<@' 1 ' C1=' A661A F<&' EC1FC' EA=' A6= ' K 1 <@' =BF0 F<==1I<6 ' D ' C<' - 1 ?=' 9' +;B==1A&' A;@1 1A&' A @' + 6A @' C<' GA; 1 1 ' 'D<' . A@<' EA=' CB=' A;;A ?<@' CA;6<=&&' C<' 6<F ;' 9' (AIA;1A&' EA=' CAI<' C<' 1 . G<;1A6' F; #'1#&' C<' >1 ?@ .' 9' (C< . 1A&' GG<;' B= ;1A&' A @' C<' ; 6'N' C<' 6<F ;' 9' AP &' ;AI1A' . @' GG<;' 16<=1A , C<' ;<=' 9' C1=' 6A <;'G; I1 F]' EA=' 'D<' ?1I< ' ' C<' - 1 ?' 9' +;B==1A'N A @' 91 A66 &' C<' B= ;1A 'G ==<==1 =' 1 ' A6 'E<;<' 'D<' ?1I< ' ' C<' - 1 ?' 9' GA1 &' A=' A <= AD61=C . < '9 ;' C<' 9A '% '+C161G' ' A;1A C<;<=A& EC ' CA@' . A;;1<@' $ ' ;A F1=' @<' ;;A1 <&' 0;A @ %B><' 9' $ (I i I' BA<$#$<$@A E'<M 7>+?@ 2 "_ B=FA &' E<;<' 6<9 ' B ?A; &' C<' E' B ;1<=&' A @' E<;' B= ;1A' C1=' '+;1 F<==' CA@' ' C<;' A66 ' CA ' 0< ;?<' &' 6<F ;' 9' A I<;' A @' - 1 ?' 9' ?6A @' E ' ;< FC' A; . 1<=&' <AFC' 9 ; ' C B=A @' = ; ?&' < <;<@' 0<; . A ' C<' B '@<' (<66<' =6<&' EC 'CA@' D<F . <' A' A;

8 ' 8 - = F? ' ! -' - " ' : ! ! >' $ ' 8* -'

=CA6 F . . A @<@ <' A @' C<' C<;' EA=' F 91@<'@ ' A;=CA6 A166<D 1=
EC ' @B;1 ?' C1=' FA . GA1? ' F . G<66<@ ?6A @ ' ;< . A1 ' 1 AF 1I<' D '
C;<A < 1 ?' A I<; ' C<' EA;' F . . < F<@' D ' ?;<A '=BFF<==<=' 1 ' 9AI . Y
9' C<' A661<@' G E<;=' C<' 6<F ;' 9' (AIA;1A' A @' C<' ;< FC' C;<A < <@'
1< A ' AB;1F<' 9' AP C< ' A' 61<B < A ?< <;A6 1 ' C<' =W; I1F<' 9'
;A F< A @' C<' F<6<D;A <@' C<I<; ' >' G ==]==1 ' 9' + ;A?B< EC<;<' C<'
6<F ;' 9' (AIA;1A' EA=' G; F6A1 . <@' - 1 ?' Y 9' (C< . 1A ' ' . C'
A9 <; EA;@=' C<' EA=' <6<F <@ . G<; ;' A ' ;A >9 ; D ' C<' A . <' 9'
CA;6<='

' C<' . <A 1 . < A;1A C<;<=A A6 C B?C' @<=<; <@' D ' A66 EA=' ;B<'
C<;=<69 ' C<' F I ><@' C<' A <=' 9' B ?A; G;<=< <@'
A;B' C<;=<69 D<9 ;<' C< . C 6@1 ?' 1 ' CW;' A; . =' C<;'= C< ' 6 'A
M@7@A> 9<E' . C=' 6@ A @' @< . A @<@' C<1;' A==1= A F<' [' G6AF<'
1 ' B;' CA @=' =C<' =A1@ [' C<' @AB?C <;' A @' C<' = ' 9' B;' - 1 ?= EC '
C G<' ' 91 @' 1 ' B' C<1;' =A9< ' <;' A@@;<==C EC1FC' EA=' 1 ' A 1
' ' !' <6<F ;191<@' A66' C<A; = A @' C<' B ?A;1A ' D6<=@;AE1 ?'
C<1;' =E ;@=<PF6A1 . <@ [<E166' @1<' 9 ;' B;' I<;<1? ;A;1A C<;<=A '
+; . G ' ;<=B6 =' 9 66 E<@' C<=<' E ;@=' ' A; . ' EA=' ;A1=<@' 9 ;' C<;
EC1FC' ;< >' B= ;1A 1 IA@<@' (AIA;1A 9 ;F<@' C<' A;J . =' @<' W?B;' '
FAG1 B6A <' A ' 1 M A @' @<G;1I<@' C<' 6<F ;' 9' A ' C1=' A <=' C<' - 1 ?'
9' A;@1 1A' CA@' A6;<A@ ' ;< B F<@' C<' <A?B< A @" @<F6A;<@' 1 ' 9AI B;' 9'
A;1A C<;<=A ' C<' - 1 ?' 9' + ;B==1A' 1 ' C1=' B; ' ;<A <@' E1 C' C<; '
D A1 1 ?' C<' F<==1 ' 9' 16<=1A A @' C<' ;< FC' 9 B @' C< . =<6I<=' ;<@BF<@'
1 ' (C< . 1A' ' C1; ' C B=A @' . < =CB ' 1 ' D< E<< ' E ' A; . 1<=' +;A?B<'
EA=' D6 F>A@<@' D ' C<' B= ;1A =' A;=CA6 @<' A 6<D 1= EC ' EA=' =< '
' C<' A==1= A F<' 9' CA ' F1 F B6@' ' ;<AFC' 1 A @' EA=' ;<G6AF<@' D '
A;=CA6 (; ?61< EC ' <=FAG<@' A6 <' 9; .' + ;A?B<' ' A><' C<' F . . A @ '
C<' @<9< F<' 9' 611=' FAG1 A6 EA=' < ;B= <@' ' ' A;=CA6 (<66<' =6<A @' C<'
6A <;91 @1 ?' 1 ' 1 . G ==1D6<' ' C 6@' 1 <IAFBA <@' 1 ' A ' C<' C<A@' 9' E<6I<'
C B=A @' 1 9A ; ' A @' C;<<' C B=A @' FAIA6; A @' <99<F <@' A' D;1661A '
;< ;<A ' ' ?;A' 1 ' C<' @<G C' 9' A' ;1? ; B=' E1 <; " C<I<; EC ' ;<0
. A1 <@' 1 ' + ;A?B<' E1 C' =1P' CB @;<@' =1F> F F<A6<@' C1=' E<A> <==' 9; .' C<'
< < . ' A @' D A1 <@' A ' C B;AD6<' FAG1 B6A 1

A;=CA6 A166<=' ;<F<1I<@' ;@<;=' ' EA FC' ' C<' A1 '5 C<' ?61=C'
A @' A I<;1A ' A; . 1<= F . . A @<@' D ' ;@' A1; A @' E1 C' EC1FC' E<;<'
A6= ' C<' ?61=C' I<;<1? 0< ;?<' A @' C1=' = ' C<' %B><' 9' B . D<;0
6A @' C<' ?61=C' E<;<' @;1I<' ' A=' 9<;' A=' =FCA99< D B;?AD I<' A AB

D< E<< ' C< . B A1 =' 9' G<==A; 'A @' C<' A1 &' C<'F B;=<' 9'EC1FC&'D C' AD I<'A @'D<6 E&'EA=''1 ' C<'CA @=' 9' C<' ;< FC' C<1;'A; . &'A6;<A@ ' ;0 . < <@'D '9A . 1 <&'A @' ' C<'G 1 ' 9'D<1 ?< F6 =<@' 'A66'=1@<=&';< ;'AF<@'1 =' = <G=N' A;=CA6'@<' A 6<='EA FC1 ?' C< . '91; .' C<' C<;'=1@<' 9' C<' A1 <&' A @'9 66 E1 ?'A66' C<1;' . I< . < =' <' C;<E' B . <; B=' F ;G=' AF; ==' C<' ;1I<;'1 '9; ' 9' C<'I166A?<' 9'%< 1 ?< 'A @'A' A;; E'@<916<' C; B?C'EC1FC' C<'< < . 'E B6@'CAI<' 'GA==' C<;<' C<'%B><'@<' 0;A . &' C<' A;=CA63=' <GC<E&'F F<A6<@'E1 C'A66' C<'11 A<= A' ' '1 'A'@<<G';AI1 <&'1 'EC1FC' C<' ?61=C'A; . ' . B=' <F<==A;16 ' @<=F< @&'EA=' 'AEA1 ' 1 ' A @'FC<F>' 1 =' A@IA F<&'EC16=' C<' A; 166<; 'E<;<' 'D<' G6AF<@' ' C<' C<;'DA >' 1 ' =BFC' A' . A <;'A=' 'F;B=C' C< . ' A@' C1='G6A ' D<< '9 66 E<@' B ' C<' ?61=C' A; . ' . B=' CAI<'D<< ' @<= ; <@&'DB ' C<' ;A=C <==' 9' 0;A . ' =AI<@'1 ' 1+<9 ;<'1 'EA='9A1;6 '< F6 =<@&'A @'D<9 ;<' C<' A;=CA6'CA@'?1I< ' C<' ;@<;'9 ;' C<' A AF>&'0;A . '6<9 ' C1='G = 'A @' C;<E' C1 . =<69'BG ' C<' ?61=C&'EC ' F;B=C<@' C1=' ; G=' E1 C' C<1;' A; 166<; &' EC1FC' EA=' A@IA A?< B=6 'G = <@' 'A' C166' 0;A . ' < @<AI B;<@' ' A><' 1 &'DB ' 1 ' IA1 &'A @' D ' C; E1 ?'C1=' ; G=' D< E<< ' C<& ;< FC'A; 166<; 'A @' C<' ?61=C&' F . G<66<@' C<' 9 ; . <;' ' @1=F 1 B<' 1 =' 91;<' ' %<9<A' 9') >70 . A '9A @ =' E<;<' 1; ;<GA;AD6<&'A @' C<' A;=CA6&'1 ' ;@<;' ' G< #<#dY' ;<=FB<'C1=' <GC<E&'CA@' '< . G6 'A66' C<';<= B;F<='E1 C'EC1FC' C<'CA@'1 < @<@' 'F;B=C' C<' < < . &'A @'CA@' ' C; E'C1=' A; . 'AF; ==' C<' ;1I<;'1 ' A' A;; E' G6A1 &' EC1FC' EA=' 1 FAGAD6<' 9' C 6@1 ?' 1 ' ' 6< ? C&'A9 <;' A' =A ?B1 A; ' < ?A?< . < ' EC1FC' CA@' ' @<F1=1I<' ;<=B6 =&' C<' ;@<;<@' C<' ;< ;<A &'A @' C<' ?61=C' ;< . A1 <@' . A= <;=' 9' C<'C<6@' 9' DA 6<

' C<' . <A 1 . <' A;=CA6' (; ?61<' CA@'D<< ' B AD6<' ' . A1 A1 ' C1=' G =1 1 ' ' C<'%A BD<'A?A1 ='+;1 F<' CA;6<=' 9' ;;A1 <&'D; C<;' 9' C<' 0;A @' %B><' ;A F1=' (AIA;1A'EA=' <IAFBA <@&'A @' 1 'EA=' 1 . G ==1D6<'9 ;' A;=CA6' A166<=&'A9 <;' (; ?61<3=' ;< ;<A &' ' . A1 A1 ' C1=' G =1 1 ' 1 ' ;A F 1A&'EC<;<' C<' CA@&'@B;1 ?' E ' . C=&'C<6@' C<'A; . ' 9' C<'A661<=' 1 'FC<F>' ' BFC'EA=' C<' . 9 ; B A <'F F6B=1 ' 9' C<'FA . GA1? ' 9' 2 8&' C1FC'FA;;1<@' C<'EA;' ' C<'9; 1<;=' 9' ;A F<' C<' . G<; ;' CA1@<=' ' '6 ?<;'G ==<==<@'A '= A <=&'A @' C1='B 9 ; B A <'+;1 F<'=1? <@'A' ;<A ' D 'EC1FC' C<' ;< B F<@' A66' C1=' G;< < =1 =' ' B= ;1A&'< ?A?1 ?' C1 . =<69&'A='E<66'A=' C<' . G1;<&' ';< . A1 ' <B ;A6'@B;1 ?' C<'F 1 BA F<' 9' C<'EA;&'A @'6<AI1 ?'C1='C<;<@1 A; 'G ==<==1 &'(AIA;1A&'B 16'A'?< <;A6' +<AF<&'1 ' C<' CA @=' 9' A;1A C<;<=A&'EC .' C<' CA@' < @<AI B;<@'

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@<=G 16&' A @' EC &' D ' C<' ;<A ' 9' ; . =&' = ;< #C< <@' C<;' A661A F<' E1 C'
?6A @' A @' C<' - 1 ?' 9' A;@1 1A
;A F<'1 ' C1=' = ;B??6<&' 9; .' EC1FC' =C<'F B6@' C G<' '?A1 ' 'A@ IA A?<&'
CA@' 6 = ' A66' C<;' A661<=' 6<B; &' EC ' E' @1<@' . ;<' CA ' 1 < ' <A;=' 6@&'
CA@' D<< ' GG =<@' ' C1=' DB;1@< = . <' EA;&' DB ' CA@' CA@' C<' E<A> <==' '
;< . A1 ' . 1 A 'A ' C<' C<A@' 9' C<' ? I<; . < ' EC< ' C<' CA@' 6 = ' C<'
G E<;' ' . A1 A1 'G<AF<
C<' <A;' 2 ' =AE' C<' EC 6<' 9' B; G<' A>1 ?' GA; '1 ' C<' EA; ' GA1 &'
9' QEC1FC' EA=' A6;<A@ ' FD < @1 ?' E1 C' ?6A @' 1 ' CW' 1 <;<= ='
2 ' 9' C<;' F . . <;F<&' B 1 <@' C<;' AI ' E1 C' CA ' 9' ;A F<&' A @
C<' E ' 96<< =&' B . D<;1 ?' C1; ' I<==<6=&' B @<;' @ . 1;A6' B; ' A @' S =<GC'
@<' IAP &' A AF><@' @ . 1;A6' A C<E=&' EC &' E1 C' C1; 9 B;' I<==<6=&'
EA=' D6 F>A@1 ?' C<' G ;' 9' B6 ' C<' ;<=B6 ' EA=' A' @;A1I ' DA 6<N'
D B ' C<' =A . <' 1 . <' E< 9 B;' ;< FC' I<==<6=' 6<9 ' (;<= ' 'F I< ' '
?6A @' E< 9 B;' C B=A @' . < ' A @' +;1 F<' CA;6<=&' C<' C<1;' 9' 61<'
BA; =' (B ' A' < . G<= ' @1=G<;=<@' C<' 96<< &' A @' C<' <PG<@1 1 ' CA@' '
=BFF<==
0< A&' @<=G 16<@' D ' C<' ;<A ' 9' ; . =&' @<F6A;<@' 1 =<69' A?A1 = ' B= ;1A&'
A @' ;<@<;1F' &' A P1 B=' E1 C';<=G<F ' ' C<' =A9< ' 9' 16<=1A&' G; . 1=<@' '
;< A><' C<' 91<6@' FF ;@1 ?' C<' G6A ' 9' FA . GA1? 'A@ G <@' D ' ;A F<&'
C<' +;1 F<' 9' 1' EA=' 'F . . A @' 1 ' C<' 6G=&' A @' 'A==1=' % ' +C161G'
A @' C<' GA 1A;@=&' EC16=' A;=CA6' 1? ';< . A1 <@' ' C<' @<9< =1I<' 1 '
6=A 1A&' A @' C<' FC1<9' <99 ;' EA=' 'D<' @1;<F <@' A?A1 = ' C<' E' 1 . ;1<=&'
EC<;<' A;=CA6' A166<=' EA=' ;@<;<@' 'D<=1<?<' C<' = ; ?' G6AF<=&' EC16=' '
C1=' G<;A 1 =' E<;<' F I<;<@' D ' AB;1F<' 9' AP &' EC ' CA@' D<< ';<F< 6 '
. A@<' A' ;< FC' A;=CA>' C<' - 1 ?' AFF . GA 1<@' C<' A; . '1 'G<;= 'N'
A' CB @;<@' C B=A @' ;< FC' = 6@1<;=' C;<E' C< . =<6I<=' BG ' C<' E'
B ;1<=&' A @' A'?;<A 'GA; ' 9' 6A @<;=' C@@' A6;<A@ ' D<< ' A>< &' EC< '
1 9 ; . A 1 ' EA=' ;<F<1I<@' CA ' +;1 F<' CA;6<=&' A ' C<' C<A@' 9' <1?C '
C B=A @' . < &' CA@&' F; ==<@' C<' (C1 <' A ' G1;<&' CA ' C<' CA@' A>< ' C<'
61 <=' 9' 1==< . D B;?&' A @' CA@';<GB6=<@' A;=CA6' @<' 1? ' 'EA=' E'
<F<==A; ' 'FCA ?<' C<' G6A ' 9' C<' FA . GA1? &' '@1;<F ' C<' G;1 F1GA6' GA; '
9' C<' 9 ;F<=' BG ' 6=A 1A&' A @' 1 ' 6A @<;=' ';< . A1 ' ' C<' @<9< =1I<'
AB;1F<' 9' AP ' 6 ';< A1 <@' 9 ; 91I<' C B=A @' . < &' EC16=' E1 C'
C<' ;<=' 9' C<' A; . ' A;=CA6' A166<=' . I<@' BG ' C<' C1 <' C<' - 1 ?'
E1=C<@' 'AFF . GA 'C1 . 'N' DB 'A' =<;1 B=' 166 <==' F . G<66<@' C1 . ' ';< . A1 '
A ' < M&

6;<A@ 9 ; . A <A;= GA= B1= : ?1I1 ?EA C1= GA==1 =
A @ C< G<;91@1 B= 1 = 1?A 1 = 9 C =< EC =G<FB6A <@1 gg
C1= I1F<= CA@ ADA @ <@ C1 . =<69 A F B;=< 9 6 =< G6<A
=B1 <= B;=1= <;= 9 C< (A; @< <=6< E<;< =BFF<==1I<6 C1= . 1= ;<==<=N
A @ C< 6A= 9 C< . EC CA@';<F . I<@ 9; . C1 . C< 1 6< 9 %BFC<== 9
LDB <AB; BP CA@ AFF . GA 1<@ C< B; < M EC<;< C< - 1 ?CA@
9A66< =<;1 B=6 166 C16= C< EA= = 166 1 @A ?<; A @ C< G< G6< EC
E<;< 9 @ 9C1 . A @ FA66<@ C1 . C< " @ !E<;< A@@;<==1 ?9<; I<
G;A <;= C<AI< 1 A66 C< FCB;FC<= 9 ; C1= ;<= ;A 1 C<A6 C
(1=C G 1 M SA . <= 1 C< G; G<; @1=FCA;?< 9 C1= @B @< . A @<@ A @
D A1 <@ C< @1= . 1==A6 9 C< %BFC<== C< C< - 1 ?;<F I<;<@ C E0
<I<; 61< D1=C G EA= @1=?;AF<@ C< 9AI B;1 < ;<FA66<@ A @ B1= EC EA=
. ;< =B;G;1=<@ CA . I<@ A C< < . 1 EC1FC ;A F< CA@ @1=G6A <@
@B;1 ?C1= 166 <== 'B ;<A= AD6 1 JB1;<@ ECA C< CA@ @ < '@<=<;I<
= . BFC A99<F 1 <I<; C<6<== C< E<;< D6< E ;@= EC1FC C<
A@@;<==<@ @B;1 ?C1= 166 <== A;=CA6 A166<= EC EA= A CA 1 .<
GG =<@ + ;1 F< CA;6<= , [;1 < C1 . ` C< =A1@ CA EC16=
B1= : 6661 EA= D<1 ?FA; ;1<@ C< . D C< + ;1 F< D @# E Ah
DA 6< `

;<@<;1F E . A@< A 9;<=61 <PG<@1 1 1 (C< . 1A A @ ;AI1A A @
E1 C1 E<6I<@A =CA@ 9 ;F<@ C<?A; ;1= 3 9+;A?B< F =1= 1 ? 9<1?C <<
C B=A @ . < FAG1 B6A <# + ;1 F< CA;6<= 6<9 C< C1 <1 A66 CA= <
A @ EA= =BGG ; <@ D A @1I<;=1 EC1FC C< - 1 ? 9+ 6A @ . A@< 1 C<
;<A; 9 C< + ;B==1A A; . N DB C<1; B 1 <@ <99 ; = E<;< AD6<
G;<I< C< <IAFBA 1 9 (AIA;1A D C< B= ;1A = A @ C<1 IA=1 9
+1<@ . D C< + ;1 F< A @ % +C161G A9 <; C<; 1F <PG6 1 = 1 1 . G;AF0
1FAD6< @<916<= C< . G<; ; CA;6<= '9 ; A C1;@ 1 . < <;<@
B 1FC C1= FAG1 A6 E ; B D FCA?;1 A @=1F> <== A @@1<@ C<;<1 C<
9 66 E1 ? <A; 9 ; =<I< #A;= 9 A?< [6<AI1 ? =A = 6 A1;< [C1=
6<== C< E ;6@ CA C< C<1?C D CB . A _?;<A <== 1=
F . GA 1D6< E1 C C< @<G C 9 CB . A . 1=<; Q 1= = - . ;5/ FC ;1<
AP1 . 161A S =<GC# AB?C D C< . 1=9 ; B <= 9 C1=
9A C<; @<F<1I<@ C< C G<= 9 C =< EC 96A <;<@ C< . =<6I<= CA C<
E B6@ D< AD6< 9D GG =< C1 . A;1A C<;<=A 9 ; C< < <;<@ 111
<? 1A 1 E1 C C<z; A @ G; . 1=<@ C1# BGG ; C< 0;A @ %B><
;A F1= C<; CB=DA @ EC . =C< C G<@ ;A1=< C< . G<;1A6 9C; <
B1= : 1;;1 A <@ A C1= G;< < =1 F 1 B<@ C< EA;

E@= C< ;<=B6 9 C1=?6 ;1 B=DA 6<N (<;?< G $.& I611FC CA@ ;<=1= <@ C<%Bff< 9 +A; . A A @ G1 6A&D<1 ?&A . ?= C<;=& A>< D 0< <;A6 E< @AC6 C< ?61=61& C< C<;CA @& 1 961F <@ <;;1D6<D6 E= B;AI & C< ;< FC 96<< & A9 <;A =<;F F 0 <= & D<1 ?@<= ; <@ 99 AG< 1 1= <;;< . < . C= 6A <;A =<F @& =JBA@; & C< 6A= EC1FC ;A F<G ==<==<@ C< F<A &Q =BFFB . D<@1 1 =B; 1 A B <JBA6 = ;B??6< <A;(<66< =6<& E1 C A 96<< 9 9 B; << I<==<6=' 9 C< 61 <1 . @<; @ . 1;A6 AE><& <I<; # < 9 C< ;< FC =C1G= D<1 ?FAG B;<@ ;A F< E =1?C<@ 9 ;G<AF<& A @ AB;1F< 9 WAP & A= C< D<= . <A = 9 D;1 ?1 ?1 AD B & CA= < <@ H1 I<= C< F1 9 A<= ;1FC N EC<;<BG C< G;<61 . 1 A;1<= 9 C< . BFC @<=1;<@ G<AF< E<;< A6 . = 1 . . <@1A <6 =1? <@ A 1P 6A CAG<66<(C< G<#9 1; 1Af <; . = 9 C1= G<AF< C< - 1 ? 9 + ;B==1A ;< A1 <@ G ==<==1 FCAG<66<& 2 9 C1= F JB<= =N % +C161G& C< D; C<1 9 % A;6 =& D A1 <@ C< @BFC1<= 9 +A; . A& +1AF< MA& A @ O BA= A66AA @ 91 A66 & C< ?61=C C< G =1 1 C< CA@ C<6@1 =1A A @ . <;1FA D<9 ;< C< EA; C< ;<F I<;<@ A@;A=1 @1A& A @1 C< <E ;6@?AI< BG 111=DB;?A @ AG< (;< & DB AFJB1;<@ C< EC 6< 9 FA@1A ;A F< ;<= ;<@ AI C< - 1 ? 9 A;@1 1A& C< E B ;1<= C< . G;<== A;1A C<;<=A N A @ C< %B FC A66 C< G6AF<= C< CA@ A>< 9; . C< . (A =<F;< A; 1F6< =C< B @<; > A99 ;@ A A= 6B . CA;6<= @EA;@& EC EA= 9 ; CE1 C <PG<66<@ D A ;@<;9 C< O I<; . < N A @ C< 91 A6 ;<=B6 9 C1= =A ?B1BA; A @ B KB= EA;& EC1FC CA@ 6A= <@ = . A <A;=& EA= A < ; . B= A@@1 1 C< ;< FC @<D 9 E<6I< CB @;<@ . 1661 = +;B==1A A6 <?A1 <@ D C1= EA;A F =1@<;AD6<1 F;<A=< 9 <;;1 ; A @ 1 96B< F<& A @ =B@@< 6 D<FA . < < 9 C< ?;<A G E<;= 9 C< 1 < . < =A6B A; <@1F = E<;< 1==B<@ @B;1 ? C< <A;= EC1FC 1 . . <@1A <6 9 66 E<@ C< +<AF< 9 1P 6A CAG<66<N A @ A . ?= C1= B . D<;. A D< . < 1 <@ C< 6AE 9 ; . A1 & C< 6A= 2 * 2 =<A6<@ D C< 166B= ;1 B= %3 ?B<==<AB& EC1FC ;<= ;A1 <@ C< F6<;? 9; . AFFB . B6A 1 ? A@@1 1 A6 E<A6 C ;?< = & C< 1 1= <;9 A;& = 9 C< 9 ; . <;- <<G<;9 C< <A6= 9 CA A . <& <= AD61=C<@1 27 A . 1610 A; =FC 6 9 ;91I< C1 . @;<@ ?< 6< . < E1 C B 9 ; B <& A @ AFCAB6 & _ C< . G ; 66<; 0< <;A6& 1==B<@ C< 9A . B= <@1F AB C ;1M1 ? C< 9;<< F . . <;F< E1 C1 C< >1 ?@ . 1 ?;A1 & EC1FC CA@ C1 C<; D<< =BDK<F <@ A C B=A @ =CAF>6<= 1 KB;1 'B= A?;1FB6 B;< AFCAB6 & A C <= . A A @ A AD6< A@ . 1 1= ;A ;& EA= B @ BD <@6 C< ?1'<A6<= 9 61< =>* *

* - F= 8 P ! / 8 : > 8 * -

9 11; << F . G ; 66<;= ?< <;A EC =BFF<<@<K <AFC C<;1 C 1<1? 9
B1= : EA= C EC <= AD61=C<@ C AP 9 91I9< G<;F< @<= 1 <@
+; K<< 9 9 ; . A =1 >1 ? 9 1 @N = ; ?6 1 . G;<==<@ D A66 C <I16=
#BA1@#'E 9 ;<=B6 <@ 9; . C 11 <JBA6 @1= ;1DB 1 9 C AP<=
APA1 KK9AKK G;1I16<?<= < K <@ D C E 91;= ;@<;=C C<
G; G =<@ ;< @<;' C AP 9 91I< G<;' F< G<;G< BA6 A @ =BD= 1 B <
1 . C A ?;<A <P < =1 9 ;' C A @ C<;' . 9A1;' A @ DB;@< = . <
1 . G = = AFCAB6 CA@ A6;<A@ I<;F . C C = ;< B B= ;<=1= A F<
GG =<@ C1= E1=< G6A = D C <+A;61A . < =C C Q ! A @ C<
F6<;? EC< C <- 1 ?3= . 1= ;<==C C A;JB1=< @< + . GA@ 1 . EC =<
G;1@< AFCAB6 CA@ =B991F1< 6 F F161A <@ 1 A 1 . G ; A . A <;C
G; FB;<@ C1= @1= . 1==A6 C< F6<;? G;<=<; I<@ C< G;1I16<?< 1 < K <@
9 @< <; . 1 1 ? ECA FCA;?<= 1 E B6@ D<A;K A @ . A1 A1 <@ 1 = ;1?C 9
6 GA 1 ? 1 = =CA;< 9 C< AP<= B @<;' C< A . < 9 [9;<< ?19 = `
B1= : = 6<6 FFBG1<@ D C1= =FA @A6 B= G6<A=B;<=C CA@ DB A =61?C
=CA;< 1 C< E1=< . <A=B;<= 9 C1= B F16 A@A . < @< + . GA@ B;
<P<;F1=<@ I<;' C1 . C< . = F . G6< < 1 96B< F<C A @ 1 #EA= =C< EC C
96A <;1 ?C1= =CA . <9116 FAG;1F<=C CA@ A ?;<A =CA;< 1 9 ; . 1 ? C< 1 9A . B=
=<;A?61 D;A @<@ D C< A . < 9 C< +A;F ABP <;9=C C< <PG< =<= 9 EC1FC
AD= ;D<@ < ; . B= =B . = <I<; C<6<==C B1= : EA= <P ;< . <6
=F;BGB6 B= 1 ;<=G<F C< B EA;@ D=<;IA F<= 9 ;<61?1 C A @ >A
AF 1I< GA; 1 C< ;<61?1 B= JBA; ;<6= D EC1FC ;A F< EA= A?1 A <@ C<
E<;< ;< <E<@ E1 C =FA @A6 D C< 1 6<;A F< 9 @< (<AB . C
;FCD1=C G 9 +A;1=C EC GB=C<@ C1= CA ;<@ 9 SA =< 1= . = 9A;' A= <I<
; @<;' CA <P ;< . < B F 1 =C B6@ D< ;<9B=<@ @ 1 ? G<;= = EC
@1 B6@ D< 6 F I1F <@C DB <I< =B=G<F <@ 9 A@C<;1 ? C<
G1 1 = F @< . <@ D C< DB66 1?< 1 B= 9<==1 A6 1F>< = E<;<
@< . A @<@ 9 C< =1F>C A @ C<1;' ; C @ P EA= <= << . <@ AFF ;@1 ? C<
A . <= 9 C<1;' =G1;1 BA6 @1;<F ;= C< +A;61A . < =BGG ; <@ D GBD61F
G1 1 G; <= <@ A?A1 = C<=< . <A=B;<=C A @ @<F1@<@ CA C< FB;W 9
A1 1< <@B =C B6@D< ;1<@ 9 ;CA I1 ? ;<9B=<@ A@ . 1 1= <;' C<
=AF;A . < = C< - 1 ?3= B F16C E<I<;C A B66<@ C1= @<F;<<C A @ < 0
K 1 <@ ;<=G<F C< DB66 A= C< 6AE 9 C< CB;FC A @ C< A < 1 6<
@1=FB==1 = 9 66 E<@ D< E<< C< +A;61A . < A @ C< ;FCD1=C G A @&D X
C< ;<9B=A6 9 C< =AF;A . < A B C< < . G ;A61 1<= 9 CW G;<6A < E<;< R
=<1M<@C C<C1 . =<69 =11 . . <@ AGG<A;A @ C< B; 9 +<<;= F I ><@
C< - 1 ? G; C1D1 <@ C< +<<;= 91 . A < @1 ? C1= =B . . =C ;@<;<@

6W ' > ' 0 ' : !>' ' 8 * '

< F B;A?<@' C< . ' 1 ' C<1;' GG =1 1 ' D ' C<' . = ' 1= ' <= 1 . 1<=' 1 ' 1 =' 9A I B;' ' D<FA . <' < CB=1A= 1F' 1 ' C<' FAB=<' 9' C<' +A;61A . < (' 6AB FC<@' 1 I<F 1I<=' A?A1 = ' C<' G; @1?A61 1<=' A @' =FA @A6 B=' 619<' 9' C<' - 1 ?(' A @' D<FA . <' <PA=G<;A <@' ' C<(' C1?C<= ' G1 FC' EC< ' 1 ' 9 B @' CA ' A66' C<' . A?1= ;A <=(' E1@1' C<' <PF<G 1 ' 9' C1; <" . < . D<;=' 9' C<' ?;<A ' FCA . D<;(' CA@' ?1I< ' 1 ' C<1;' ;<=1? A 1 ' BFC' EA=' C<' = A <' 9' G GB6A;' 9<<61 ?' 1 ' C<' FAG1 A6' IC< (' ' 7 C' SA BA; (' 272(' A ' B CAGG ' E;< FC(' A . <@' %A . 1< =(' = ADD<@' C<' - 1 ?' A ' C<' ?A <=' 9' C<' C<' GA6AF<' 9' <;=A166<=' C<' E B @' EA=' 6 ' =61?C (' DB ' 1 ' $+ ' ,5.5' 9<A;<@' CA ' C<' E<AG ' EA=' G 1= <@(' A @' C<' - 1 ? C1 . =<69' D<61<I<@' CA ' C<' CA@' ;<AFC<@' C1=' 6A= ' . . < =' C<' G1 1 ' 9' C<' B; ' A ;1DB <@' C1=' F;1 . <' ' C<' G GB6A;' <PF1 < .,< ' FAB=<@' D ' C< I1 6< ' GG =1 1 ' 9' C<' +A;61A . < N' A @' C<' . A?1= ;A <=' ;< . D6<@' A ' C<' <P < ' 9' C<1;' G<;16' = ' 9' C =<' EC ' CA@' =< ' 1 ' C<1;' ;<=1? A 1 =' CA= < <@' ' 99<;' C<1;' =<; I1F<=' A ' <;=A166<=' A @' ' G; <= ' C<1;' @<I 1 ' ' C<' F B;=<' 9' C<' A==A==1 3=' ;1A6' C<;<' AGG<A;<@' ? @' ;<A= ' ' =BGG =<' CA ' C<' CA@' ' AFF . G61F<=' C<' B; ' 9' +<<;=(' 9 ; . <@' 9' C<' G<<;=' 9' C<' >1 ?@ . (' A @' C<' . A?1= ;A <=' EC ' CA@' ;< A1 <@' C<1;' =<A =(' ;1<@' C<' F;1 . 1 A6(' A @' F @< . <@' C1 . ' ' C<' 9;1?C 9B6' GB 1=C . < ' 1 961F <@' ' ;<?1F1@<=' <' CA@' C1=' ;1?C ' CA @' DB; ' 1 ' A' 91;<' 9'=116GC\ ;(' C1=' 96<=C' E 6=' ; ' E1 C' ;<@ C ' G1 F<;=(' A @' . 6 < ' 6<A@' EA=' G B;<@' ' C1=' E B @=' C<' EA=' C< (' EC16= ' = 166' 61I1 ?(' . ' A=1 . @<;' D ' 9 B;' C ;=<=N EC< ' C<' 9;A? . < =' 9' C1=' D @ ' E<;<' DB; ' ' A=C<=' A @' C<1;' F1 @<;=# C; 1I ' ' C<' E1 @=

9 <;' C1=' 91;1?C 9116' G; F<<@1 ?' B1=' : ' < @<AI B;<@' ' F F161A <' C<' G GB6A;' 9<<61 ?N C<' ?;<A <;' B . D<;' 9' C<' . A?1= ;A <=' E<;<' ;<FA66<@(' A @' C<' +A;61A . < ' ;<=B . <@' 1 =' CAD1 BA6' 9B F 1 =

C<' A; JB1=<' @<' + . GA@ B;(' EC ' EA=' @1= . 1==<@' 9; .' C<' GA6AF<' EC16= ' C<' A; JB1=<' - 1 ?' F =1@<;<@' C1 . =<69' 1 ' @A ?<;(' ;< B; <@' 1 ' ;1B . GC(' A @' C<' 1 1= <;' AFCAB6 (' EC ' CA@' F ;1DB <@' ' C<;' < . G ;A; ' @1=?;AF<(' A @' ;?< = (' EC ' CA@' G< 6 ' <PB6 <@' 1 ' 1 (' E<;<' =AF;191F<@' ' C<;' A ?<;' C<=<' E ' 1 1= <;=' E<;<' C<' . =' AD6<' . < . D<;=' 9' C<' . F16(' EC1FC(' E' CA ' 1 ' EA=' @<G;1I<@' 9' A66' 1 =' A6< ' A @' = ;< ? C(' ;< . A1 <@' B @<;' C<' @1;<F ' 1 96B< F<' 9' C<' A; JB1=<

' C1='G<;1 @' A' ?< <;A6' EA;' CA@' A6;<A@ ' D; >< ' B ' 1 ' C<' E ' E ;6@=' C<' ? I<; . < =' 9' ;A F<' A @' ?6A @' CA@' 6 ?' =1 F<' F<A=<@' ' <P

=C B6@' G<; . 1 ' C<' . GA ' '=BGG ; ' 1 =' 0 I<; ;' A ' 1 =' E ' <PG< =<ℕ 1 ' EC1FC' FA=<' C1 ?' E B6@' CAI<' D<< ' @<91 1 <6 ' F . G; . 1=<@' ;' 6 = ' 61I<' CA@' ;< B; <@' ' @ ' A @' E<' CAI<' A6;<A@ ' =<< ' CA ' %BG6<1P' 6AI1=C<@' C1=' E ' ;<= B;F<=' E1 C' 1 F . GA;AD6<' ?< <; =1 ' A @' . A@<' C<' . = ' ;< . < @ B=' <P<; 1 =' ' ;<GA1;' C<' ;<I<;=<=' EC1FC' CA@' 'D<< ' =B= A1 <@ ' ;1FC1 G 6 ' A?A1 ' D<=1<?<@' EA=' ' C<' G 1 ' 9' 9A661 ?' 1 ' C1=' KG E<;' A @' ' A><' 1 ' C<' 6 ' AEA1 <@' A' ;<1 9 ;F< . < ' 9' E<6I<' CB @;<@' . < ' < 61= <@' A @' GA1@' D ' C<' . GA ' EC1FC' CA@' 6 ?' D<< ' G; . 1=<@ ' C< ' A; ;1I<@' A ' 6< ? C' DB ' AFF . GA 1<@' D ' A' 0 I<; . < ' ' . . 1==1 <;' A . <@' 0 @<C<B' EC ' CA@' D<< ' =< ' ' ;<A ' E1 C' C<' ?61=C' ' '=BG<;=<@<' %BG6<1P' A @' ' =< @' C1 . ' ' ;A F<' %BG6<1P' EC ' CA@ 6 ?' 9 ;<=<< ' C1=' 9A66' A ' F<' D< <@' A @' =P1; ;< @<;1 ?' C1=' AB C ;1 ' JB1 <@' 9 ;' <I<;' C<' =F< <' 9' A' G; =G<;1 ' EC1FC' EA=' <P ;A ;@1 A; ' A=' C1=' @1=?;AF<' 9 <;' CAI1 ?' D<< ' C<' G ==<== ;' 9' 1 . . < =<' ;<A=B;<=' <P < @<@' C1=' =EA I<;' C1; ' . 1661 =' 9' . < ' A @' IA= ' <; ;1 ;1<=' C<' ;< B; <@' ' +;A F<' = ;1GG<@' D ' C1=' E ' CA @=' D<FAB=<' C<' CA@' E1=C<@' ' D<= E' A ' < . G1;<' ' C1=' F B ; ' <' AGG<A6<@' 1 ' IA1 ' ' C1=' ?6 ;1 B=' =<; I1F<=' C1=' ;1?C =' A @' C1=' 1 . . < =<' =AF;191F<=' A @' A9 <;' A' 9<E' <A;=' @1<@' 1 ' G I<; ' A @' <?6<F ' A=' @1@' C1=' ;1IA6' A @' I1F 1 . ' A' (B;@ A1= %BG6<1P' CA@' =FA;F<6 ' JB1 <@' C<' = 16' 9' @1A' EC< ' A ' 1? . 1 1 B=' _ ;<A ' EC1FC' EA=' A9 <;EA;@=' ;A 191<@' 1 ' B; G<' EA=' F 0 F6B@<@' A ' A@;A=' D ' C<' F . . 1==1 <;=' 9' C<' E ' 0 I<; . < =' a F D<;' 27 bℕ' C<' G;1 F1GA6' F6AB=<=' 9' EC1FC' 9 = 1GB6A <@)' = ' CA ' <1 C<;' 9' C<' . GA 1<=' =C B6@' 1 <;0 9<;<' 1 ' C<' 1 <; A6' G 61 1F=' 9' @1Aℕ' @' CA ' C<' A?< =' 9' <1 C<;' _ . GA ' =C B6@' AFF<G ' 9; .' C<' A 1I<' ? I<; . < =' <1 C<;' @1? 1 1<=' 991F<=' ;' C B;=ℕ 8;@' CA ' A6' G6AF<=' A @' <; ;1 ;1<=' FFBG1<@' D ' C< .' =C B6@' D<' ;<= ;<@' ' C<' 0;A @' ?B6' E1 C' C<' <PF<G 1 ' 9' C =<' EC1FC' C< ' CA@' =<I<;A66 ' G ==<==<@' D<9 ;<' C<' 6A <' EA;ℕ C' CA ' C<' E ' . GA 1<=' =C B6@' @1I1@<' D< E<< ' C< .' C<' 1 . G ; A '@1= ;1F ' 9' A=B61 ' GA A . ' A @' CA ' A ' C<1;' G ==<==1 =' =C B6@' D<' G6AF<@' ' A' 9 1 ?' 9' G<;9<F ' <JBA61 , A @' CB=' E<;<' 6 = ' 1 ' A' 9<E' @A =' C<' 9;B1 =' 9'= ' . A ' ;< . A;>AD6<' <PG6 1 =' 9' C<' G; 9 B @' G 61F ' A @' 9' C<' A= 1=C1 ?' <91D; =' 9' A' ?;<A ' . A ' ?6A @' 1 C<;1 <@' 1 ' C<' @1<=' A66' C<' 1 96B< F<' 9' EC1FC' ;A F<' @<G;1I<@' C<;=<69' A @' =C<' F B6@' E' 9;<<6 ' A @' 9<A;6<==6 ' 6A ' 1 ' # <' A=' C<' 9; . @A 1 ' 9' C<;' 9B B;<' < . G1;<' C<;< C<' = A <' 9' C1 ?=' EA=' ' . ;<' G; G1 1 B=' ' C<' . A1 < A F<

9'' G<AF< 1 ' ; C .<;1FA EC<;<@;1 ?C< G;<F<@1 ?CB @;<@A @919 '<A;=?6A @A @ ;A F<CA@9 B @<@F '

9 C< + $$AM>+C' =1@< AD6<F 6 1<='C<<CA @C<D B @A;1<=
7@+?M'$+' B7<M
:@7$?>',5'20,5 9FA@1A' IA'F 1A EC1FC'EA='F<@<@'?6A @'D 5 61<
;<A '9 1P 6A CAG<66<E<;<'166'@<91 <@A @''C<C<;
;< FC EC 'E<;<'C<G ==<== ;='9 A A@A CA@'A=F< @<@'C<'AE0
;< F<A='9A;'A='C<6A><='=;1<A @'A;1 #A @'E'E1=C<@D '.<A ='9'A'
FCA1 '9'= ; ?'9 ; ='C<DA >='9 C<C1 'A @'1==1==1GG1'
F <F 'C<1;' <= AD61=C.< ='1 'A A@A'QE1 C'C =<EC1FC'C<'CA@'1 '
B1=1A A EC16='C<F 6 1= ='9 1;?1 1A';' <E' ?6A @'@<.A @<@'
A='A' @<G< @< F '9 C<1;' <;;1 ;'C<IA='@1= ;1F''C<=BC'9
C<'AE;<F<9; .'C<66<?CA ';'(6B<B A1 ='C<DA >d'
9'C<C1 ' ; .'C<=<';1IA6'G;<<=1 ='A; =<G<;G<BA6'LBA;;<6='
$7A<'MBA<$#$<$@A' D<E<<'C<F 6 1= ='9'C<E 'A 1 =N'A @'A6;<A@ 1'
,5.20,5 /' 278A' 1;?1 1A '.AK ;;@<;<@' '@1=6 @?<C<;<FC'9; .
;'%BJB<= <' C<C1 CA@'D<<'=B B @<@'D 'A'=BG<;1 ;'9 ;F<'1 'A'
G6AF<A.<@'0;<A' <A@ E=A @'CA@'D<<'9 ;F<@' 'FAG1 B6A <' C1='
.AK ;'EA='0< ;?< A=C1 ? A @'C<A99A1;'1 'EC1FC'C<.A><='C1='91;='
AGG<A;AF<1 'C1= ; EA='D< <9'C<G;1 F1GA6'FAB=<='9'C<EA;'
EC1FC'EA='= ''=<'C<E ;6@'1 '96A.<=
'C<9 66 E1 ?' <A;'A' ;<FC'991F<; '@<SB. I166<=<''
@<.A @'C<=B;;<@<;'9'A'9 ;'1 'C<FFBGA 1 '9'C< ?61=C G<;1=C<@
?<C<;'E1C'C1; '9'C<.<'B @<;'C1='F . .A @A @'C1='FA A=;GC<
EA='<?A;@<@'1 ';A F<A='A '@1 B='I1 6A 1 '9'C<;B6<='9'EA;'A @'C<
6AE'9'A 1 =
C<;<FC'F 6 1= =1 'A661A F<E1C'C< A 1I<;1D<=G<<@16 '<PAF <@'
A'D6 @ ';<I<?<'A'D @'9'E<6I<CB @;<@';G='=<'D'C< ?61=C'
0 I<; .<B @<;'C<F . .A @'9 0< <;A6'(;A@@ F>'C<A==1= A F<
9'1;?1 1A'(;A@@ F>A'A';A=C'A @'CAB?C '.A @1=@A1 1 ?'C<G;<0
FAB 1 =<F<==A;'1 'A'EA;'9'=>1;.1=C<='EC1FC'C<EA='B AFFB=.<@
EA='A==A16<@'EC16='C1='EA 'A AF>';'%BJB<=<1 'C<.1@='9'
A'@<916<F6 C<@'1 'C<E @D 'A';G'9 ;<FC'A @' @1A =EC
1 I1=1D6<C<.=<6I<=1;<@' 'C1='E '<PG =<@'.<'9; .
@3@>< '>+C'C@><M'
9'!@+@7>#' 7>C1'
CB?Q',5. <I<;'@1;<F1 '(;A@@ F>'C1.=<69A @'=<I<'CB @1Y<@'9'
C1='= 6@1<;=G<;1=C<@'1 'C1='A.DB=C

C<=<A'EA='6<==G;G1 1 B='C<;<FC'A;.='C<=JBA@;'9'
@.1;A6'(=FAE<'A AF><@'A' ;<FC'@1I1=1 '99'<E9 B @6A @A @

>' E ' I<==<6=ℕ A @' =C ; 6 ' A9 <;EA;@=ℭ D ' A ' ;@<;' 9' C<' ?61=C' @.1;A66 'A @'1 ' AFF ;@A F<' E1 C' A ' @1 B=' #= <.ℭ C<' ?61=C' =C1G=' 9' EA;' 9<66' BG ' C<' ;< FC' .<;FA 16<' .A;1 <ℭ A @' >' C;<<' CB @;<@' .<;FCA ' I<==<6=' XI1 C B'A 'G;<I1 B=' @<F6A;A 1 ' 9' EA;

CB=' C<' GAF191F' C G<=' 9' C<' ;< FC' B;' E<;<' 9;B= ;A <@'1 ' <I<; ' @><F 1 'ℕ A @' A '6< ? C' C<' =FA6<=' 9<66' 9; .' C<' < <=' 9' C<' -1 ?ℭ A=' C<' E1 <==<@' C<' @1=AGG<A;A F<' <'D ' <' 9'# C<' 166B=1 =' ' EC1FC' C<' CA@' =AF;191F<@'1 ' C<' @1<=' C<' G; =G<F ' 9' A '<.G1;<ℭ D ';<FA661 ?' %BG6<1Pℭ A @' ADA @ 1 ?' CA ' ?;<A ' .A 3=' B @<; A>1 ?' 1=' 0 I<; .< ' @<0 .A @<@' A '<PG6A A 1 ' 9' C<' ?61=C' 0 I<; .< ' 9' C<' AF =' 9' I1 6< F<' 9' EC1FC' C<' ?61=C' AI 'CA@' D<< ' ?B16 'D ' C<' =<1MB;<' 9' B;' .<;0 FCA ' =C1G=ℕ 1 =' F .G6A1 =' E<;<' ;<A <@' E1 C' F <.G ℕ A @' EA;' EA=' = ' A9 <;EA;@=' @<F6A;<@

7

G + .

)' ')') ' ' ' ' (' ' ' '

" '

* +' EA;' EC1F61' D; >< B '1 ' 27*' D< E<< ' ?6A @' A @' ;A F<' =G<<@16 '
< . D;AF<@' C<' EC 6<' 9' B; G<#' A @'1 =' ;AIA?<=' <P < @<@' I<;' C<' < 1;<'
E ;6@' A;1A C<;<=A&' ;<?;< 1 ?' C<' 6 ==' 9' 16<=1A&" EC1FC' CA@&' D<< '
F<@<@' ' +;B==1A&' A @' C G1 ?' ';<F I<;' CA ' G; I1 F<&' CA@' 9 ; . <@' A '
A661A F<' E1 C' 61MAD< C ' +< ; E A&' C<' . G;<==' 9' B==1A&' B?B= B=' &'
C<' 6<F ;' 9' AP ' A @' 61 ?' 9' + 6A @&' A @' C<' - 1 ?' 9' E<@< &'
;<@<;1F' @ 6GCB=' B1=' : &' EC ' CA@' D<< ' 6 ?' 1 ' A661A F<' =1 C'
C<' - 1 ?' 9' +;B==1A' A?A1 =' A;1A C<;<=A&' CA@' '9<<61 ?' 9' ;<=< . < '
A?A1 =' CA ' +;1 F<&' DB ' C<' =BGG ;' 9' ;A F<' EA=' <=G<F1A66 ' @<=1;<@' D '
C<' LB<< ' 9' B ?A; &' A @' A=' =C<' > <E' C E' ' 96A <;' A@A . <' @<'
+ . GA@ B;&' EC ' EA=' . BFC' 1 F< =<@' A ' = . <' ;1@1FB6<' @1;<F <@' A?A1 ='
C<;' D ' ;<@<;1F&'=C<' F ;1I<@' 'G; FB;<' A ' A661A F<' D< E<< ' C<' E '
F; E =' C< ' ;<F1G; FA66 ' > @<; >' '9B; 1=C' A' F 1 ?< ' 9' E< '
9 B;' C B=A @' . < ' 'A1@' 1 ' ;<G<661 ?' C<' A AF>=' D ' EC1FC' <1 61<;' . 1?C '
D<' C;<A < <@N A @' = ' A66' C<' 9 ;F<=' 9' C<' >1 ?@ . ' E<;<' G6AF<@' A '
C<' @1=G =A6' 9' B= ;1A

C1=' <;;1D6<' A @' @<G6 ;AD6<' EA;&' > E ' B @<;' C<' A . <' 9' C<' <I< '
M@' @G@+ @>7A(<A;=3 A;&' F . . < F<@' E1 C' F1;FB . = A F<=' 9AI B;AD6<' '
>7 ',5 0,552' G;A F<' C<' %B><' 9' 1FC<61<B&' EC ' CA@' C1 C<; ' D<< '
6 '> E ' 9 ;' C1=' ?A66A ;1<=&' A ' F<' . A@<' C<' =FA @A6' 9' C1=' I1F<='
9 ;? < ' D ' C<' F JB<=' 9' 1 ;FA&' A ' 1=6A @' 1 ' C<' <@1 <;;A <A &'
EC1FC' C<' ?61=C' CA@' A><' ' G ==<==1 ' 9' @B;1 ?' C<' EA;' 9&' C<' =BFF<=0
=1 '1 ' GA1 ' C<' ;< FC' O I<; . < ' <JB1GG<@' A ' B6 'A' 9 ; . 1@0
AD6<' <PG<@1 1 &' @<= 1 <@' AGGA;< 6 '9 ;' . <;1FA&' DB '1 ';<A61 '1 < @<@'
9 ;' 1 ;FA' ' C<' F . . < F<. < ' 9' G;16' <I<; C1 ?' EA=' ;<A@ N'
C<' %B><' 9' 1FC<61<B' EA=' < ;B= <@' I;1 C' C<' F . . A @' 9' C<' <PG<@10
1 &' EC16=' @ . 1;A6' O A61== ;<' I@ C' E<6I<'=C1G=' 9' EA;&' EA=' '<=F ;' C<&

;A =G ; =& G; <F ' C< @1=< . DA1'>A 1 & A @ F I<;' C<'A AF>' C< ?61=C 1 1= ; 'CA@ ;<F<1I<@ B . <; B=&1 1 . A 1 =' 9 ECA 'EA=' 1 < @<@ E1 C B GA 1 ?' A 'A < 1 ' ' C< . & A @ A ' 6< ? C& 6 ' EC< '1 ' EA=' 6A <& . A@<' CA= ' A @ 1 =B991F1< ' G;<GA;A 1 =' 9 @<9< F<& A @ =< ' @ . 1;A6 (?' ' C<' A==1= A F<' 9 C<' C;<A < <@ 1=6A @ ' C< ' (?' A;;1I<@ 99 1 ;FA C< ;< FC E<;<' D<=1<?1 ?' C<' 9 ; . 1@AD6<' F1 A@<6 9 ' +C161G& EC1FC F . . A @=' AC & C<' FAG1 A6 9 C< 1=6A @& A @'1 =' . A? 191F< G ; ' C< ?A;;1= ' B . D<;<@ AD B ' C;<<' C B=A @ . < & A @ 1 ' C< AD=< F<' 9 1 =' 0 I<; ;& C1=' 61<B < A & 6@ O< <;A6 (6A>< < & 1 ' =G1 <' 9 C1=' A?<' A @ 1 91; . 1 1<=& . A@<' A ' D= 1 A <' @<9< F<' C<' C G<=' 9 C< D<=1<?<@ 6A ' 1 ' (?3=' 96<< & EC1FC EA=' A6 . = ' <JBA6 1 ' B . D<;' A @ = ;< ? C " ' CA ' 9 C< ;< FC A @ ' C<' " C 9 A C< '9 B?C ' C<' 6<9 'E1 ?' 9 C< ?61=C& B @<;' @ . 1;A6 <= & CA@ A '91;=' C<' A@IA A?<& DB 'EA=' DA@6 '=BGG ; <@ C<' ;< FC 61 <' 9 DA 6<& EC1FC CA@ D<< ' < . G ;A;16 ' D; >< & EA= =G<<@16 ' ;<9 ; . <@& A @ D '=BG<;1 ;' AF 1F=' EA=' F ;1 B=' I<;' A66 C< <99 ; =' . A@<' D ' @ . 1;A6 (?& EC & 6 =1 ?' A66 C G<' 9 D<1 ?' AD6<' ;<61<I<' & ADA @ <@ 1 ;FA '1 =' 9A <& A @ =A16<@ . C C1=' =JBA@; '9 ; O1D;A6 A; Y C< ;< FC E';<@ BD6<@ C<1;' <99 ; =' 1FC<61<B ;@<;<@ A ' A==AB6 & A @& < F B;A?1 ?' C<' D<=1<?<;=' D 'C1=' E ' <PA . G6<' B @<;' A . =' . B;@<; B=' 91;<& FA;;1<@ A66 C< B <;' E ;>=& =E ;@ 1 'CA @& 9 ;F<@ C<' 9 ; ;<==' 'FAG1 B6A <& A @ E ' 1 ;FA 9 ;' ;A F<' C<' I1F ; D A1 <@ D ' C< ;< FC 96<< ' 9 AC ' =BD=<JB< 6 'F = @ . 1;A6 (I ?' C1=' 619<I 9 ;' C1=' @<9<A ' EA=' 1 . GB <@ ' ;<A ' 9 I 6 ! ' 5 : ' 0 : ') = & A @ CAI1 ?' D<< ' ;1<@ A @ 9 B @ ?B16 & C<' EA=' =C & ;<@<;1F ' @1@ ' EA1 ' 'D<' A AF><@ D 'C1=' < < . 1<=& DB ' 1 ' ;<G6 ' ' C< <E' 6<A?B<' 9 ; . <@ A?A1 =' C1 . & CA= < <@ '1 IA@<' =IA19 1 G ;=1 & AP & A @ >' %;<=@< & 9; . ' E611FC C<' - 1 ?' 9' + 6A @ EA=' 9 ;F<@ '96 ' <' C< ' < F B <;<@& A ' E =1 M& A;=CA6 (; E & A ' C<' C<A@' 9' 919 ' C B=A @ 11= ;1A =& A @ E1 C 6 'CA69 CA ' P; . D<;' 9 ; G=' F . G<66<@ C1 . ' ' ;<GA=' C<' ?<;' <' <P ' CA= < <@ ' +1 . A& EC<;<' C<' AP ' A; . ' EA=' D6 F>A@<@& A @ F . G<66<@ 1 '

I' M@ 7@+?M C ; $7>#3B##BS@C <M@ + #$AM 3#@@<' >A' 3>7' >A' <#$@ $A#>+C' B3' G$3>' +' <M@ , A<' M@ 7@<D7+@C' <B' 7@AD ; @ M$A' LBA<' >' <M@ @+<7>+?@ B3' <#$@ LB7<' <B' J>7' <M@ L>AA> @ <B' <M@ 7@#$@3A' SM$?M ; $ M<' M>G@ @+<@7@C' $+' '$$A' >JA@+?@ @ S7B<@ <B') >7AM>#$?M@0 #$@+ %P ' M>G@ L7@3@77@C' KBD7 #B7K' <B' ; K' BS+' >+C' <M@ L7$+?$L>#BJR@?<' B3' BD7 @NL@1 C$<$B+' <B' >+K' MB+BD7 ' ; $ M<' ; KA@#3 M>G@ >?aD$7@C' JK' <M@ LD7AD$<' B3' >' 3@S' B3' <M@ @+@ ; K(A' G@AA@#A ' SM$?M >LL@>7' <B' J@ $+' >' G@7K' C$A<7@AA@C' ?B+C$<$B+ i

7* ! % ' ! ' ' ' ' 66&

FAG1 B6A <' (<=1@<=' C<' E< 9 B;' C B=A @' . < ' G; . 1=<@' ' B= ;1A&' A @' F . . A @<@' D ' C<' +;1 F<' 9' BD1=< '=1P ' C B=A @" ;< FC' ; G=' < <;<@' O<; . A ' 1 . @<;' A;=CA6' @3 = ;W<=&' A @' C;<A < <@' C<' 6<F ;A <' 9' A I<;&' A' G ==<==1 ' 9' C<' - 1 ?' 9' ?6A @' %3 = ;W<=' IA JB1=C<@' B . D<;6A @' A ' A= < . D<;?&' A ' C<' . . < ' EC< ' A' B; ' 1 ;1?B<' ;<0 G6AF<@' C1 . ' D ' A;=CA6' 1FC<61<B&' EC '9 66 E<@' C1=' G6A =' 9 ;' C<' FA . 0 GA1? &' @; I<' C<' A I<;1A =' 1 ' A' F . <;' <A;' A@<' ' C<' 6D<&' A @' 9 ;F<@' B . D<;6A @' '=1? ' C<' FAG1 B6A 1 ' 9' 6 = <;=<I< ' ' Fl '<E< < v# a 272b' N EC1FC' =< ' <' G ; 1 ' 9' C1=' A; . ' '1 =' C . <=&' F @< . <@' A C<;' G ; 1 ' ' 1 AF 1 &' A @' G6AF<@' C<' 6<F ;A <' 9' A I<;' A ' C<' . <;F ' 9' ;A F<

;<@<;1F&' I1F ;1 B=' I<;' +;1 F<' CA;6<=' 9' ;;A1 <' A ' C<' =A ?B1 A; ' DA 6<' 9' +;A?B<&' EA=' A9 <;EA;@=' C1 . =<69' IA JB1=C<@' 'D ' A;=CA6' %AB ' A ' C M< . 1 M&' A @' 6 = ' E< 91I<' C B=A @' . < &' EC< ' C<' 6<A; <@' C<' =BFF<==1I<' @<9WA =' 9' C1=' ?< <;A6=' A @' C<' @1=A= ; B=' FAG1 B6A 1 ' 9' 6 = <;=<I< ' ' FC<F>' 9 ;' ;<@<;1F&' C E<I<;&' EA=' 6 ' C<' G;<6B@<' ' A' I1F ; ' N C<' . B6 1G61<@' C1=' ; G=&' = ' '=G<A>&' D 'FA;; 1 ?' C< . ' E1 C' C<' B . = ' ;AG1@1 ' 9; .' <' G ; 1 ' 9' C1=' = A <=' 'A C<;' N A @' EC< ' IA JB1=C<@' A @' GB;=B<@&' C<' A6EA =' =C E<@' C1 . =<69' 1 ' 9 ;F<' EC<;<' 6<A= ' <PG<F <@' ' C1=' . < . ;AD6<' EA;' GB ' C<' F; E 1 ?' BFC' 'C1=' ?6 ; ') C<' CA@' ' F < @' E1 C&' =1 . B6 A < B=6 ' A @' A6 <&' C<' ;< FC&' B= ;1A =&' A @' B==1A =&' F . . A @<@' D ' AD6<' ?< <;A6=' N C<' =AE' A; . 1<=' E1F<' A=' = ; ?' A=' C1=' E ' 1 IA@<' C1=' = A <=N C<' 6 = ' C1=' FAG1 A6&' A @' EA=' C1 . =<69' 9;<JB< 6 ' =B;; B @<@' N DB &' @1=G6A 1 ?' 1 ' C<' . 1@= ' 9' A66' C1=' G<;16=' C<' . = ' A= 1=C1 ?' =>166&' C<' 1==B<@' I1F ;1 B=' 9; .' < I <1 ' ;1A6&' A @' 9 B @' C1=' G E<;' 6 ' C<' . ;<' 91; . 6 ' <= AD61=C<@' A9 <;' A' = ;B??6<' 1 ' EC1FC&' AFF @1 ?' ' A66' CB . A ' 9 ;<=1?C &' 1 ' EA=' @<= 1 <@' ' D<' @<= ; <@

I<;EC<6 . <@' D ' C<' ;<I<;=<=' 9' C1=' ?< <;A6=' 1 ' C1=' <;;1D6<' FA . GA1? ' 9' 272&' A @' = 166' . ;<' D ' C<' FAG1 B6A 1 ' 9' C<' ?61=C' A ' 6 = <;=<I< &' =B;; B @<@' D ' =<I<;A6' A; . 1<=' 1 ' AP &' A @' C<6@' 1 ' FC<F>' D ' A;=CA6' %AB &' ;<@<;1F' AGG<A;<@' ' D<' E1 C B ' A ' ;<= B;F<&' A @' 9 ;' A' . . < ' D<61<I<@' C1 . =<69' 6 = &' DB 'C1=' ?< 1B=' = 166' F ;1I<@' ' E1 ' 9 ; B <' 'C1=' =1@<' <' <=FAG<@' C<' A;=CA6' E1 C' A@ . 1;AD6<' =>166&' A @' D 6@6 ' E< ' ' ;<F 1 ;<' C<' ;< FC' A; . ' F . . A @<@' D ' BD1=<&' A @' CA ' 9' C<' . G<;1A61= =&' EC1FC&' B 1 <@&' E<;<' A@IA F1 ?' ' =B;; B @' C1 . ' (' A' =<;1<=' 9' AD6<' . A <BI;<=' D<9 ;<' C< . ' C<' 1 @BF<@' C< . ' 'D<61<I<' CA

C< EA=' A P1 B=' 'A 1@' C< . (' A @' A ' 6< ? C' < FA . G<@' 1 ' A ' A@IA A?< B=' G =1 1 'A ' =DAFC' BD1=< < @<AI B;<@' '=B;G;1=<C1 . 'A @ /*5+)' /5' /&*%' -2.' 80 ' 6J (&/' 011' -2.' ' 5+) ')%/.' F)*)' 75*) ' I1F ; ' 9 ;<@<;1F' A BAJ>?M' ,5 5 =<< ' 0;<@<;'1F' FCA ?<@' $ C1=' 9; ' E1 C B ' C< > E6<@?< 9' C< < < . (' EC . ' C< A66 E<@' 'AGG; AFC' C1=' F 6B . =(' A @' EC< ' C< ;< FC' A @' . G<;1A61= =' A;;1I<@' E1 C1 ' ;<AFC' 9' C1=' FA (' ;<@<;1F3=' < =' @; GG<@' ' C< ?; B @(' A @' C< +;B==1A ' A; . 'AGG<A;<@' D< 1 #<< ' E ' C166=(' 9; .' EC1FC(' I 66< <@' A'(' . B;@<; B=' 91;<' C< A==A16A =' E<;< = ;BF>' E1 C' = BG ;(' A @' C< . G<;1A6' ; G=' 96<@' E1 C B ' 91?C 1 ?' C<1;' <PA . G6<' EA=' 9 66 E<@' D ' C< ;< FC' . K9A ; (' EC1FC' ;< 1;<@' 1 ' @1= ;@<;' D<9 ;< =1P' +;B==1A ' DA A61 =(' A @' 6<9 ' D<C1 @' C< .' C;<< C B=A @' @<A@' A @' =<I< ' C B=A @' G;1= <;=' C< A;JB1=' @< A= ;1<=(' A ' C< C<A@' 9' C< FAIA6; ' A @' E ' 1I1==' ;<?1 . < =(' A6 < @1@' C1=' @B ' 1 ' C1=' DA 6<(EC1FC' 1=' A6 . = ' B <PA . G6<@' 1 ' C< B61 A#' A A6=' 9' ;A F< ;<@<;1F' >' ' ;<G =<' A9 <;' C1=' B C G<@ 9 ;' I1F ; (' DB ' 96 1 ?' 1 ' 16<=1A(' EC1FC' EA=' A6 . = ' 6 = (' 6 (' A?A1 = ' +;1 F< CA;6<=' A @' %AB (' C< D6 @ ' DA 6< 9' 1==A(' <A;' (;<=6AB ' C< ?61=C' C< ' D; >< C< FAG1 B (' 6A 1 ' 9' 6 = <;=<I< (' A @' C< A I<;1A ' A; . ' ;<AGG<A;<@' B @<;' <;@1 A @' 9' (;B =E1F>(' 1 =' <E' F . . A @<;(' EC ' A==<; <@' CA ' C< CA@' C1 ?' '@ ' E1 C' C1=' . 161 A; ' F I< 1 ' BFC' E<;< ' C< 1 < ' C< G;1 F1GA6' ;<=B6 =' 9' C1=' 91;=' FA . GA1? (' @B;1 ?' EC1FC' C< . A= <;' 9' A' >1 ?@ .' EC1FC' CA@' D<< ' =FA;F<6 ' CA69' A' F< B; ' 1 ' <P1= < F<(I<;FA . < A6 . = ' 1 . A1@<@' C< G E<;' 9' ;A F<' A @' B= ;1A(' A @' @<=<;I<@' C< =B; A . < 9' 0;<A ' D ' IA JB1=611 ?' C< A; . 1<=' 9' C< E ' . = ' 9 ; . 1@AD6< G E<;=' ' C< 1 < C< B ' 9' 6<; . ' 6 = ' 1 ' C< 9 66 X11 ?(' <A;' C< DA 6< 9' ;<I<6 (' A?A1 = ' <;@1 A @' 9' (;B =8I1F>(' A @' EA=' =BG<;' (A 6<' 9' ;< <6 (' =<@<@' D ' C< A;JB1=' @< A@<=') BD1=<(' A @(' . @<;' C1 . (' C< %B><' @<' (; ?61<(' GA; 6 ' ;<GA1;<@(' C E<I<;(' A ' @<;=CAB=< ' A @' A ' B M<6D<;?(' C<' @1=A= <;=' 9' C1=' D6 @ ' DA 6<(' A @' C< ;< FC' ;< < <;<@' A I<;N' DB '1 ' 27!(' (;B =E1F>(' IA JB1=C<@' D ' C< %B><' @<' (; ?61<' A ' (<;?C< (' IA JB1=C<@' 1 ' C1=' B; ' C< A;=CA6'@<' A@<=' A ' 1 @< ' 1 ' <= GCA61A' ;<@<;1F' C< ' 9 B?C ' E1 C' IA;1<@' =BFF<=' A?A1 = ' C< B= '(' ;1A =' A @' B==1A =N A @' C< . = ' . B;@<; B=' DA 6< 9' C1=' FA . GA1? ' EA=' CA ' 9'$; @ ;9(' EC<;<' C1; C;<<' C B=A @' . < (' 9'EC .' E< ' E ' C B=A @' E<;<' B==1A =' A @' <6<I< ' C B=A @' +;B==1A =(' ;< . A1 <@' ' C< 91<6@' 9' DA 6<

7) k $ 8* /

+1 A9 <;EA;@= ;@ CA CA . C< 1 1= <; 9 0< ;?< EA=@ C1=
1 . A C< C<A@ 9 C< ?61=C AD1 < @1;<F <@C1=
$+ ; @7$?>+C A < 1 C< F 6 1<= A @?AI<9;<=C I1? B; . A;1 1 . <
>$> ,5.50,5. G<;A 1 = FA@1A . =G1 < 9 C< <1; = 9 C< A;JB1=
@< FA6 . ; < . A1 <@1 C< G E<; 9 C< ?61=C LB<D<F EA= A>< A9 <; A DA 6<9 B?C B @<; 1 =EA66=1 EC1FC G<;1=C<@ C< E F . . A @<;= 1 FC1<9 69<A @ FA6 . A @1 2*" C< ?61=C= A FC<@9; . C< ?;A=G 9 ;A F< C< EC 6< 9 A A@A B; A; . = CA@ D<< . ;< 9 ; B A < 1 9;1FA EC<;< E< 6 = < <?A6 J ;1 =1A EC<;< C< ?61=C D<FA . < . A= <;= 1 272 9 C< ;< FC <= AD61=C . < 9 DA @<9 A? ;< C< OA ?<= 1 . @< A66 EC EA= 9 ;1=C ;1?1 DB 9 A I1 6< A @ @<=G 1F FCA;AF <; EA= < ;B= <@ D B1= : _E1 C C< @B 9 AI< ?1 ? B; @<9<A =1 C< A= " 1= 91;= <PG6 1 EA= =<1M< ; A1 %AI1@ C< F A= 9 ; . A @<6 A @ ;AM< 1 =@<9< F<=N DB @199<;< F<=EC1FC A; =< D< E<< C1 . A @ C<F . . A @<; 9 C< AIA6 =JBA@; B @3 FCW E<;< 9A A6 C< 1 <;<= = 9 ;A F<

?6A @EA= A C1= 1 . C;<A < <@ D C< @<=F< BG C<; F A= = 9 E ;< FC A; . 1<= B @<; C<I<; A @ C< %B><@3 1?B166 EC1FC $ >G>$ @1=A=<;Y E<;< D<G; <F <@ D E ;< FC =JBA@; = C< 91;= 9 C<=<C E<I<; EC1FC EA= F . . A @<@ D @<6A 6B< EA= @<= ; <@ D @ . 1;A6 (=FAE< 99 AG< A1 1 F< EC16= E . C= 6A <; C< =<F @I . @<; A;=CA6 @< 96A = B @<; E< C< =A . < 9A < E1 C1 =1?C 9 C< F A= 9 (;1 A @1I1=1 9 C1= 96<< < <;<@ C< ;1I<; 16A1 < A @ EA= D61?<@ ;< . A1 C<;< C1= @<9<A EA= ;<?A;@<@ A= 1? . 1 1 B= A @ C< @<9<A EA= @1=?;AF<9B66 > X;A A= C< (A 6< 9 @< 96A = q

C< %B><@ 1=<B6 A 9;1< @ 9 . < 9 6< <;= A @ GC16 = GC<;= EC . C< G; <F <@ =BGG ; <@ D A@A . @< + . GA@ B; %#><# C 1Y CA@ BFF<<@<@ C< DDW @< (< . 1= A= 1 1= <; 9 ; ;<1? A@B 99A1;=N C< ?< <;A6 @1;<F 1 9 A99A1;= D<1 ? B @<; @< 16C B< <EC 'F . . < F<@ C1= @B 1<= D = . <B=<9B6 . <A=B;<= D < 9 EC1FC C< ;<@BF<@ C< < ; . B= G; 91 = 9 C< A; . <;= O< <;A6 < CA69N F;<A 1 ? =<I< E C B=A @ =CA;<= 9 A C B=A @ 61I ;<= <AFC A . ?= EC1FC C< @1I1@<@ C< #C<; CA69 C< EC 6< 9 C< . E<;< A>< BG 1 . . <@1A <6 A @ E1 C1 9 B; A @ E< C B;= C< . G ; 66<; O< <;A6 CA@ D A1 <@ =<I< E . 1661 = I<;EC<6 . <@ E1 C G;A1=<=

2 * 22 ^ # < ' " , .

' C1=' FFA=1 'D '<I<; ' . B C(' C<' EA=' <JBA66 '@<F;1<@' EC< (' 1 ' 27!(' 611=';<9 ; . =' A AF><@' C<' ;1?C =' 9' C<' BGG<;' F6A==<=' ' C<' @' <G0 < . D<;' C<' CA@' ;<?1= <;<@' A 'A' (<@' 9' SB= 1F<' A '<@1F ' 9' <; ;1 ;1A6' BD0 I< 1 (' EC1FC" =BDK<F <@' ' APA 1 ' E1 C B '<PF<G 1 ' A66' C<' F6A==<=' EC1FC' CA@' G;<I1 B=6 'D<< '<P< . G '9; .'1 ' C<' B F; 'EA=';?< <;A6(' A @' C<' A?1= ;AF ' EA=' C<' 91;='' '<PF6A1 .' A?A1 =' C<' E1=<' . <A=B;<' E1 C' = ' . BFC' I1 6< F<' CA ' 1 ' EA=' <I<;' FA;;1<@' B ' ' @<' 16C B< <' C< ' =B=G< @<@' A' G ; 1 ' 9' C<' GA . < =' @B<' 9; .' C<' ;<A=B; (' A @' 1 I1 <@' C<' F1 1M< =' ' A><' C<1;' =16I<;' G6A <' ' C<' 1 ' ' D<' F 1 <@' ?6A @(' 1 9 ; . <@' 9' C1=' G< B; (D<61<I<@' CA ' ;A F<' EA=' E1 C B ' ;<= B;F<=(' A @' ;<9B=<@' ' ;<A ' E1 C' C<;

C<' FA . GA1? ' 9' 2*"' EA=' ?6 ;1 B=' 1 ' 0<; . A '9 ;' A;=CA6' (; ?61<(' EC ' IA JB1=C<@' C<' <;<@1 A; ' +;1 F<' 9' (;B =E1F>' A ' FggG?K?g 9' ;DAFC(' <A;' A==<6(' 9 ;' C<' FAG B;<' 9' EC1FC' C<' EA=' G;< ' GA;1 ?' <' 9' C<' F ;G=' 9' C1=' A; . (' F . . A @<@' D ' C<' A; JB1=' @<' 11= ;1<=(' >' BG'1 =' G =1 1 ' <A;' ' CB . D<;?(' ' C<' ;1I<;'DA >&A @'D<1 ?' A AF><@' D ' C<' +;1 F<(' ?A1 <@' A'D;1661A ' I1F ; ' EC1FC' @<61I<;<@' <=<6 ' '=BD61 . <' 1 = A F<' 9'=<69 @<I 1 '1 . . ; A61M<@' C1=' DA 6<' C<' C<IA ' 61<1' @3 ==A=(' A' FAG A1 ' 1 ' C<' ;<?1 . < ' BI<;? <(' CAI1 ?' D<< ' =< ' B ' @1GG1 ?' C<' 1?C ' ';<F 1 ;<(' EA=' =B;G;1=<@' D ' C<' A I<;1A =' E1 C1 ' <A; =C ' 9' C<' ;< FC' FA . G(' A @' E< 'DA < =' @1;<F <@'A?A1 ='C1='D;<A= ' ' =G<A>' C<' > <E' EA=' '@1<(' DB ' [' <6G(' BI<;? <' ' C<' F;1<@N' ['1 ' 1=' C<' < . z`' <' 9<66(' G1<;F<@' C; B?C' A @' C; B?C' D ' C<' DA < =' 9' C<' < < . (' DB ' C<' ;< FC' FA . G' EA=' ' =B;G;1=<@' ;<@<;1F' E' <=FAG<@' 1 ' AP '9; .' C<' B . <; B=' A; . 1<=' EC1FC' =B;; B @<@' C1 . (' A @' IA 0 JB1=C1 ?' =BFF<==1I<6 ' AB@C ' A ' 1? 1 M(' A @' %AB A ' ;?AB(' ;< >' 16<=1A

+ @1FC<;; (' EC1FC' B . D<;<@' <1?C ' C B=A @' 1 CAD1 A =(' EC .' C< ? I<; ;(' A66 (' CA@' A61< A <@' D 'C1=' G;1@<' A @' @<=G 1= . (' >Q$+ 'B3' BBC$0 9<66'1 ' C<' F B;=<' 9' C1=' <A;'1 ' C<' CA @=' 9' C<' ?61=C

B '@3 FC1(' EC 'EA=' FA66<@' BG ' ';<61<I<' C1=' G6AF<(' @1@' ' AGG<A;& A @' =<I<' 'CB @;<@' = 6@1<;=' E<;<' A66' CA ' ;< . A1 <@' 9 ;'1 =' @<9< F<' C< E ' EA=' A>< (' A @' 1 =' 9 ; 191FA 1 =' ;AM<@N' A @' A66 (' ;< B; 1 ?' ;A F<(' EA=' AFFB=<@' 9' ;<A= (' A @' GA1@' 9 ;' C1=' @<9<A ' E1 C' C1=' 619<' C< +A;61A . < ' F @< . <@' C1 . (' A @' C<' EA=' <I< ' 1 =B6 <@' D4(' g' +>$' >+C' @N@?>_ D<1 ?' F I#<@' ' C<' =FA91D6@' ?A??<@ ' <' 6<9 ' D<C1 @' C1 . ' A' = 'EC ' EA=' A' E ; C ' AI< ?<;' 9'C1=' . < . ;

61A6 $<;D= EC A==B . <@ C< F; E D C< A . < 9 A CA;1 < A @ = . <@A =A9 <;EA;@= C<B 9 ; B A <+< <; EA=A==A==1 A <@ C< . G;<==@<F6A;<@C<;=<69 <B ;A6 A @ C< ;<=B6 = 9 C< FA . GA1? 9 2* C< 6A= 9 C1= D6 @ EA; 6<9 <AFC GA; 1 C< =A . < = A < A= D<9 ;< ?6A @ ;A F< GA1 A @ + ; B?A6 C< =1? <@ G;<61 . 1 A; F I< 0 1 = EC1FC E<;< F I<; <@ 1 'A @<91 1 1I< G<AF< C< " C 9 <D;B11; 2*8 D C< ;<A 9 +A;1= EC1FC EA= @1=?;AF<9B6 +;A F< C1= G E<; F<@<@ ?6A @ A G ; 1 9 B1=1A A&Y A A@A A @ 1 = @<G< @< F1<= C< 1=6A @ 9 AG< (;< A @ A66 C< C<; 1=6A @= 1 C< 0B69 A @ C< ;1I<; AE;< F< ?6A @ 5 % 5 & ;< A1 <@ < <?f16&" 1 9;1FA N A @ 1 C< A= @1<= <AFC A 1 ;<=B . <@ G ==<==1 9 C< <;;1 ;1<= C< CA@ C<6@ G;<I1 B= C< F . < F< . < 9 C< EA; F @1 1 CA ;A F<=C B6@ =< @ ; G= C<;< C< 1=6A @ 9 1 ;FA A @ + ; +C161G E<;< ;<= ;<@ ?6A @ A @ ;A F< ?AI< BG - 1 ?0< ;?< C1= 6<F . < 9 A I<; C< ?61=C EC A F< B; D<9 ;<CA@ 6 G =0 =<==<@ D< @ C< (;1 1=C =6<= C< 1=6A @= 9 S<;=< A @ 0B<; = E 9 B @ C< . =<6I<= . A= <;= 9 A . B6 1 B@< 9 1=6A @= A @ = ; ? AIA6 = A 1 =1 <I<; =<A N EC16= C< ;< F61 AI A= A6 . = A 1C16T # A @ C< < . G1;< 9 C< F<A EA= ?1 < I<; ?6A @ +<AF< EA= A 61< =A . < 1 1< =1? <@ D< E<< C< . G;<== A;1A C<;<=A C< 6<F ; 9 AP A @ C< - 1 ? 9 +;B==1A N A @ A9 <;=<I< =A ?B1 A; FA . GA1? = C< C;<< G E<;= = @ C< =A . < 9 1 ? A= D<9 ;< C< EA; ;<@<;1F ;<0 A1 <@ 16<=1A A @ 0 6A M D G; . 1=1 ? C1= =BGG ; C< = 9 A;1A C<;<=A C< ;FC@B>< S =<GC EC EA= =<6<F <@ A= - 1 ? 9 C< . AG= A @ =BFF<<@<@ C< . G1;< C< C 9 B?B= 2*7

C< 6A= <A;= 9 C1= EA;E<;< =1? A61M<@ D C< AD 61 1 9 C< ;@<; 9 C< S<=B1 = 1 C< >1 ?@ . 9 ;A F< C< GC16 = GC<;= A @ C< +A;61A . < = E<;< C<1;< < . 1<= A @ = B?C 9 ;' A > 7 ( ) GG ; B 1 9 = ;1>1 ? C< . A . ; A6 D6 E EC1FC C< 9 B @ L& 1 % 8 1 C< 9A16B;< 9 C< S<=B1 AIA6< <9 ;' . A . 1661 = C< F1< 9 ;0 . A66 =B . . <@ D< A =E<;AD6<9 ;C1 . ;<9B=<@ @ = N EC<;<BG C< +; FB;<B; 0< <;A6 @ <=G<F1A66 A CA6 A1= C< +; . <B; 0< <;A6 9 Y C< +A;61A . < & 9 (;1 A 6AB FC<@ A?A1 = C< . < . D<;= 9 C< L ;@<; A 1 . . < =< B . D<; 9 =B1 = C< S<=B1 = @<9< @<@ C< . =<6I<= DB 9<<D6 N

4 M@ 7@ ; >$+C@7 B3 BD$A$>+>' S>A ?@C@C JK 7>+?@ <B L>$+ <B 7@?B ; L@+A@ M@7 3B7 <M@ ?@AA$B+ B3 #B7$C>' <B + #>+C

; ;;)

27* ^ ' ' ' S ' ') ' *8

@<61I<; '1 ' C<1;' CA @=' 9' C<' . A;1 1 . <' G6AF<=' A=' G; <F ;=' ' 2* '
0< A' =B; ;< @<;<@' A66' 1 =' ;1?C =' I<;' ;=1FA' ' ;A F<' A @ ?aD$A$$B+' B3
' @<' CABI<61 ' 1 . . <@1A <6 ' G; F6A1 . <@' B1=' : ' : 1 ?'
C<;<' C<' 1 @1? A ' 1 CAD1 A =' A; B=<@' D ' C<' I 1F<' 9'
+A 61' 1 . . <@1A <6 ' ;A ' ' A; . =' ℕ DB ' C<1;' F ;BA?<' EA=' G E<;6<==' 1#A1 = '
A' ;< FC' A; . ' F . . A @<@' D ' C<' B '@<' ABP ' +A 61' EA=' <P16<@' A @
;=1FA' =BD . 1 <@' ℕ DB ' 1 ' D A1 <@' 1 =4<6<IA 1 ' 1 ' A' GA =' y yA9%A @
G;<=<; I<@' C<' ;1?C ' ';<?B6A <' 1 =' E ' AP<=
C<' <I< ' <A;=3 A;' A@@<@' C1; 9 B;' . 1661 =' 9' A BA6' 1 <;<=' '
C<' A 1 A6' @<D ' ' <AFC' <A;' C<' <PG< =<=' <PF<<@<@' C<' ;<F<1G =' D '
C1; <1?C ' . 1661 =' A @' C<' AP<=' EC1FC' CA@' < ; . B=6 ' 1 F;<A=<@'
@B;1 ?' C<' EA;' E<;<' '6<==< <@' A ' C<' G<AF<' C<' +A;61A0
. < ' 9' +A;1=' < @<AI B;<@' ' G; F 1;<' = . <' ;<61<9' ' C<' V'Ff . ; '
GBD61F' DB;@< =' CA ' 9' (<=A Z ' ;<9B=<@' ' ;<?1= <;' C<' Es= E YYQYY3
- A6' <@1F =' ℕ A @' . A ' 9' C<' GG =1 ?' . A?1= ;A <='
E<;<' <P16<@ ' G<<@16 ' C E<I<;' A66' C<' +A;61A . < =' >' BG' C<' FAB=<'
9' (<=A Z ' A @' C<' +A;61A . < ' 9' +A;1=' < <;?< 1FA66 ' . A1 A1 <@'
' C<' ?;<A ' @1=G6<A=B;<' 9' C<' B; ' CA ' C<' EC 6<' . A?1= ;AF ' 9' C<'
>1 ?@ .'9 ; . <@' DB 'A' =1 ?6<' D @ ' @1I1@<@' 1 'IA;1 X1=' F6A==<=' B1=' : '
A 'A (A6' =1 1 ?' C<6@' 1 ' 2**' @< 1<@' ' C<' +A;61A . < =' CA 'A== F1A 1 ''
' EC1FC' C< ' . A@<' G;< < . =' A @' 6A1@' @ E ' C<' 9 66 E1 ?' . AP1 . ='
[<' C 6@' B;' F; E ' @1;<F 6 ' 9; .' C<' CA @=' 9' O @' ℕ A @' C<' : 1 ?' G =0
=<==<=' = 6<6 ' A @' E1 C B ' @<G< @< F<' 'A ' C<;' AB C ;1 ' C<' 6<?1=6A0
1I<' G E<; `' ' E166' D<' =<< ' 9; .' C<=<' 9AF =' CA ' C<' - 1 ?' E1=C<@' '
<= AD61=C' A 'AD= 6B <' . A;FC ' A @' CA ' C<' ?;<A 'KB@1F1A6' D @1<=' A6 C B?C'
G ==<==<@' E1 C' 1@<A=' . ;<' ;' 6<==' IA?B<' A=' ' C<' DK<F ' 9' C<1;&<99 ; =' '
E<;<' < @<AI B;1 ?' '9 ; .' A' GA;61A . < A; ' . A;FC ' EC1FC' =C B6f#C 6@'
C<' - 1 ?' A @' A 1 '1 ' =BDK<F 1

%1= B;DA F<=' D; ><' B ' 1 ' IA;1 1=' #G; I1 F<=' A @' <=G<F1A66 ' 1 ' (;1 0
A ' EC<;<' C<' %B><' @3 1?B166 ' ? I<; ;' 9' C<' G; I1 F<' ;< @<;<@'
C1 . =<69' @1 B=' D ' C1=' = < . ' A @' @<=G 1F' A@ . 1 1= ;A 1 ' C<' +A;61A . < '
9' (< <=' >' F ? 1MA F<' 9' C<' F . G6A1 =' EC1FC' E<;<' D; B?C ' A?A1 = '
C1 . ' A @' A=' C< ' F B6@' D A1 ' ' =A 1=9AF 1 '9; .' C<' 1B; ' C<' ?;<A <;'
B . D<;' 9' C<' . < . D<;=' ?AI<' 1 ' C<1;' ;<=1? A 1 ' C<' G; FB;<B; ?< <;A6 '
A' CA6 A1=' EC ' CA@' I<C< . < 6 ' @< B F<@' C<' ? I<; ;' EA=' A; ;<= <@'
A @' A>< ' E1 C' C1=' = ' A @' C;<<' F B F166 ;=' ' C<' F1 A@<6' 9' ' A6
)'

_EC1FC&C< E1=C<@ D< G;<=< =C B6@ A>< G6AF< A <;=A166<= < C< F I<; <@ C< B; 9 +<<;= 1 A (<@ 9 SB= 1F<& A @ KB= 19 1 ? C< %B>< @3 1?B166 & ;@<;<@ CA C< EC 6< G; F<== A?A1 = C1 . =C B6@ D< A B66<@ C< +A;61A . < C< 1==B<@ A @<F;<< EC1FC A AF><@ C< %B><3 C B; C< - 1 ? A B66<@ 1 N CA@ C< EC 6< G; F<== = ;BF> 99 C<; 66= N A @ A A C<; (<@ 9 SB= 1F<& C<6@ C< 2 C 9 %<F< . D<;& G; C1D1 <@ C< +A;61A . < . A>< B=< 9 C< A . < 9 - EC< =G<A>1 ? 9 C< C<; D @1<= 9 C< . A?1= ;AF = =B=G< @ A66 1 = G; F<<@1 ?=& A @ ?1I< 1 1 = ;<=1? A 1 C< ;< . = ;A F<= . C ;<9<;< F< C1= ;1? 0 ; B= <@1F E<;< ;<A <@ E1 61 F < . G & A @ C< + A ; 61# < F<A=<@ <P<;F1=< 1 = 9B F 1 = B13 ;<I 6B 1 @<G;1I<@ 1 A6= 9 1 = . = G E<;9B6 G; <F ; C< %B>< @< C 1=<1@ CA@ <I<;GA1@ A F B; C< 9AI B;1 <& A@A . < @B (A;;1& A @ =C<& 1;;1 A <@ A C1= . A 19<= F 0 < . G & @1@ A66 =C< F B6@ D;1 ? C1 . 1 @1=F;<@1 E1 C C< - 1 ?& <=G<0 F1A66 AFFB=1 ? C1 . 9 CAI1 ? < @<AI 11;<@ 6<A@ ;A F< 1 A EA;E1 C ?6A @ 1 9AI B; 9 C< . <;1FA F 6 1<=& C< @1=G =<@ ;<D<6 C< - 1 ?& < A . B;<@ 9 A =FA @A6 B= <A=<& 1<6@<@ C< @< . A @= 9 C< 9<I B;1 <& A @ C< %B>< @< C 1=<B6& ?< C<; E1 C C1= ;<6A 1I<& @< +;A=61 & EA= @1=?;AF<@ A @ DA 1=C<@ C1= <= A < A CA <6 BG EA= C< & 9 ; C< 91;= 1 . < =1 F< C< ; @<& CA A G ; 1 9 C< B; A @ C< C1?C<= F6A==<= 9 = F1< & @1=G6A <@ A 9 ; . 1@AD6< =G1;1 9 GG =1 1 C< O I<; . < 66 CA EA= . = yldFC 1 <B&1221 @1= 1 ?B1=C<@ 1 ;A F< @1@ 1 =<69 C B; D GA 1 ?F B; C< %B>< @< C 1=<B6 1 C1= ;< ;<A & A @ D ?1I1 ? A A1; 9 ;1B . GC C1= @1=?;AF< C< @1= . 1==A6 9 C< %B>< @< C 1=<B6 EA= 9 66 E<@ D C< AGG 1 . < 9 C< %B>< @3 1?B166 C 1 1= ; 9 ;<1? #T#99A1;=& A @ =C ; 6 A9 <;EA;@= 9 C< DDW <;;A A= . G ; 66<; O< <;A6 9 C< 1 A F<= C<=< E . < 9 ; . <@& ?< C<; E1 C C< CA F<66 ; ABG< B& A ;1B . I1;A < F<6<D;A <@ 9 ; C< ;<I 6B 1 EC1FC 1 <99<F <@ 1 C< KB@10 F1A6 ;@<;

C< ! C SA BA; & 22 & <AFC 9 C< . < . D<;= 9 C< +A;61A . < E<;< AEA><@ D E . P=>< <<;=& EC G;<=< <@ C1 . A ;@<; ;<=B . < C1= 9B F 1 = A @ =1? A A?;<< . < ; ;<9B=A6 @ = D A =1 . G6<3 [<=`; ;[ `C<?;<A <;B . D<;9 C< . ;<9B=<@N A @ C<= . A66 B . D<; EC & <1 C<;9; . 9<A; ;A= 1=C . < & ?AI< 1 C<1; F =< & ;< ;AF <@ C< 9 66 E1 ? @A C< 9 66 E1 ? @A C< ;<F<1I<@ A 1 1 . A 1 CA C<1; 991F<= E<;< F 91=FA <@N A @ <AFC EA= <P16<@ D A

1 . . < =< AB C ;1 ' 9' C< +A;61A . 9< ' 9' +A;1=(' C< ?;A B1 B=' A@ . 1 1= ;A0 1 ' 9' KB= 1F<(' C< AD 61 1 ' 9' C< =A6< 9' 991F<=(' A @' C< ;W I1=A1' 9' C< F;1 . 1 A6' 6AE=' < CB=' =<FB;<@' C< <P<FB 1 ' 9' C1=' IA= 'G; K<F =(' A @' 1 @BF<@' . A ' 9' C< . < . D<;=' 9' C< G; I1 F1A6' +A;61A . < =' ' ;<?1= <;' <@1F =' EC1FC'=BGG;<==<@' C< . (' C<'G;1F<=' C< 'CA@' GA1@'9 ;' C<1;' 991F<=' D<1 ?' ;<GA1@(' A @' ' ;<?1= <;' C<;=' EC1FC' ;<F6 C<@' C< . ' E1 C' C<1;' 9B F 1 =(' E1 C' EA?<=' A @' AGG 1 . < =' ' C< F6 =< 9' 22 (' 1 ' C< =GAF< 9'6<==' CA ' A' <A;(' C< <E' KB@1F1A6' A;;A ?< . < =' E<;<' 1 ' 9 ;F< I<;' C< EC 6< =B;9AF< 9' C< >1 ?@ . (' A @' ABG< B' D A= <@' CA ' C< CA@' E1 C;AE ' C< ; XI ' 9; .' C< ;<?1= ;A;3=' 991F<

C16=' ABG< B' CB=' I1 6< 6 ' A6 <;<@' C< ;< FC' . A?1= <;1A6' = = < . (DD< <;;A ' @<A6 ' E1 C' C< 91 A F<=' 1 'A' . A <;' ' 6<==' A;D1 ;A1 ' AG@' @<=G 1F' <' 9 ; . <@' '91 A F1A6' = = < . (DB ' < @<AI B;<@' 6 ' ' AI 1@' . A>1 ?' GA . < =' A @' ' G; FB;< ;<= P1;F<=(' A @' ' <99<F ' KKA1 C<=< DK<F =' C< CA@' ;<F B;=< 6 ' ' ;AGAF1 ' A @' DA@' 9A1 C ' ' ;< ;< FC . < ' EA=' . A@< 1 ' C< 6BPB;1<=' 9' C< B; (' A @' B1=' : ' <I<;' F<A=<@' ' <PCAB=' C< F ; . ; 'D 'C1=' G; @1?A0 61 1<=' C< 6 ' A < . G ' A ' ;<9 ; . ' F =1= <@' 1 ' A ' A;D1 ;A; ' ;<@BF 1 ' 9' C< @1I1@< @=' GA AD6< D ' C< A <(' A @' EA=' 1 ' 9AF ' A' =CA . <9B6' AF ' 9' DA >;BG F ' C< AP<=' E<;< A ' C< =A . < 1 . < ;A1=<@' ' A ' <P ;D1 A ' A . B (' A @' <;;A '@<= ; <@' C< . = '?6 ;1 B=' AFC1<I< . < ' 9' A;FCAB6 ' , C< 6AE' EC1FC' AB C ;1M<@' C< 9;<< F1;FB6A 1 ' 9' F ; ' C; B?C B ' C< >1 ?@ . (' 1 ' ;@<;' CA ' C< . 1?C ' < ?A?< 1 ' 1 9A . B=' =G<FB6A 1 =(' C< =BFF<==' 9' EC1FC' EA=' =<FB;<@' D ' C< 9<A;=' A @' E;< FC<@ <==' 9' C< G< G6< Y

C< %B>< @3 1?B1 (' 1 1= <;'9 ;' ;<1? ' 99A1;=(' A @' C< 611;@'1 < . D<;' 9' C1=' ;1B . I1;A <(' A ' C< =A . < 1 . < A66 E<@' C;<< + E<;=' ' . A>< A'=<;1 B=' A AF>' ' C# ;1?C =' 9'G< G6<=' A @' C< DA6A F< B7@$ +' 33>$7A 9'G E<;' 1 ' B; G<' C< 6A=' 6<F ;' 9' AP (' - 1 ?' 9' + 6A @(' @1<@' 1 ' 2*8 ' CW' @1==< =1 =' A . ?=' C< + 6<=' ?AI< ' A CA;1 < ' A @' C< 6 r ?' 9' + ;B==1A' A' ?;<A '1 96B< F< I<;' 61<K9 66 E1 ?' <6<F 1 ' C< ;<61?1 B=' JBA;;<6=' A . ?=' 61< A C 61F=' A @' C< F 9 ; . 1= =' E<;< A@@<@' ' C< G 61 1FA6' @1=F ;@=' ' CA= < ' C< ;B1 ' 9' C1=' B 9 ; B A < F B ; (' A @' A 1=6AB=' B?B= B=' + 1A E=>1(' < 9' C< . G;<==3=' 6@

Y' <;;A 'G; C1D1 <@' C< <PG ; A 1 ' 9' F .' 9; .' A' F<; A1 ' G; I1 F<(' A @' EC< ' 1 =' G;1F< CA@' 9A66< ' C<;<(' C< GB;FCA=<@' 1 ' A @' = 6@' 1 ' 1 ' = . < C<;' G; I1 F< EC1FC' C< CA@' 9A . 1=C<@' C ' <PF1 1 ?' C< <PG ; A 1 ' 9' F .' 9; .' 1 ' ' C< B . =

1';=F 1InW ^ ' ' ' ' *!

9' C1=#619<' A @' A9 <;' A' ;<1? ' 9' 919 1 <' <A;=' EC1FC' 1=' <' 9' 61<' . =' @<G6 ;AD6<' ;<F ;@<@' 1 ' C1= ;

C<' 6@' ;@<;' 9' C1 ?=' F . 1D6<@' 1 ' <I<; ' @16B 1 ' A; B @' A' 61; <' @1=?;AF<@' D ' =FA @A6=' EC1FC' E<;<' ;1 ;<@<< . <@' D ' A ' ?6<A . ' 9' <1 C<;' I1; B<' ;' ?6 ; ' C<' ?;<A ' D @1<=' E611FC' CA@' = ' 6 ?' 9 ; . <@' C<' = ;< ? C' A @' F ;1DB <@' ' C<' =G6< @ B;' 9' C<' . A;FC ' 9A@<@' O< <;A6;<rFF' AEB ' A @' G<;1=C<@ ' C<' F6<;? ' A; B=<@' A?A1 = ' C< . ' =<6I<=' C<' . B; . B;=' 9' A66' < 61?C < <@' G<;= =' A @' C<' 1 @1? A 1 ' 9' C<' . 1@@6<' F6A=='D ' C<1;' I1 6< F<' EA;@=' C<' SA =< 1= ='C<1;' F;B<6' G; F<<@1 ?=' ' C<' =BDK<F ' 9' C<' DB66' 1?< 1 B='A @' C<' I1F<=' 9' . A ' 9' C<1;' B . D<; ' C<' C1?C' D161 '6 = ' @A ' D ' @A ' . ;<' A @' . ;<' 9' 1 =' G;<= 1?<' 1 ' C<' < <=' 9' C<' A 1 ' C; B?C' 1 =' = A <' 9' =<; I1 B@<' 1 ' A' B; ' EC1FC' EA=' @1=?;AF<@' 1 ' GBD61F' G1 1 ' EC16= ' @1<' =CA . <9B6' ;A991F' EC1FC' EA=' FA;;1<@' ' 1 ' GA < =' 9' D161 ' F ;1DB <@' ' @<G;1I<' C<' G; I1 F1A6' D6<==<' 9' A66' <= 1 . A 1 ' 1 A66 ' C<' 6@' +A;61A . < ='E611FC' CA@' = ' 6 ?' A @' = ' CAGG16 ' @<9< @<@' C<' ;1?C =' 9' C<' ; E ' A @' EC1FC' CA@' 9 ; . <;6 ' = ;< ? C< <@' C<' C; <' EC< ' <I< ' C< ' 9 ;' A' 1 . W' GG =<@' C<' O I<; . < ' CA@' D<< ' @<= ; <@' D ' C<' A6' AB C ;1 ' C<' 91 A F<=' 9' C<' >1 ?@ . ' E<;<' 1 ' A' @<G6 ;AD6<' = A <' A @' C<' ;<A=B; ' =C E<@' A' @<91F1 ' 9' 9 ; ' . 1661 =' C<' E;< FC<@ <==' 9' C<' G< G6<' ' I<;EC<6 . <@' E1 C' AP<=' A @' I<PA 1 B=' DB;@< ='EA=' <PF<==1I<N . A ' 9' C<' 1 CAD1 A =' 9' C<' F B ; ' @1= ;1F =' ADA @ <@' A?;1FB6 B;<' 9 ;' F ;ADA @' ;A@<N A @' ;A F<' =<< . <@' 1 ' =C ; N ' CAI<' =B >' DAF>' 1 ' 61A ' = A <' 9' =G 61A 1 ' A @' ;B1 ' 9; .' EC1FC' 1 ' CA@' D<< ' ;<=FB<@' D ' < ; ' ' A @' C1=' . 1 1= <;=

' C<' . 1@=' 9' = ' . A ' FA6A . 1 1<=' A @' =1? =' 9' @1== 6B 1 ' C<;<' ?;<E' BG' A' =G1;1 ' 9'1 JB1; 'A @' A A6 =1='EC1FC' EA=' 'B A < @<@' E1 C' @ C?<;' <=JB1<B' S<A ' SAFJB<=' B==<AB' A @' 6 A1;<' C<' 6<A@<;=' 9' A' G E<;9B6' =FC 6' A AF><@' E1 C' C<' . A?1F' = ;< ? C' 9' ?< 1B=' C<' <PF<==<=' 9' A;D1 ;A; ' G E<;' A @' =B . . <@' C<' G< G6<' 9' ;A F<' ' C<' < K 0 . < ' 9' C<1;' G 61 1FA6' ;1?C =' ' F; E@' 9' @1= 1 ?B1=C<@' . < ' =B@@< 6 ' A; =<' 9; .' C<' ;A >=' 9' C<' G< G6<' A @' 9 B?C ' B @<;' C<' =A . <' 96A?' %3 6< . D<; ' %1@<; ' 66<6I< 1B=' @166AF' AD6 ' A @' . A ' C<;=' IF; 61;<E' C<' <P1= 1 ?' ;@<;' 9' C1 ?=' C<' ?;<A <;' B . D<;' 9 66 E1 ?' C<' <PA . G6<' 9' 6 A1;<' ' 9 < ' F 9 B @<@' C<' ? @' E1 C' C<' <I16' 1 ' C<1;' I1 6< ' A AF>=' A @' C1;=' A9 <;' CAI1 ?' @< B F<@' C<' ADB=<' 9' 61<' F6<;1FA6' G E<;' < @<AI B;<@' '=CA><' C;1= 1A 1 ' '1 =' @<<G<= ' 9 B @A 1 =

+ '

7$X)' ' ' ' ' " ' ' ' ' ' ' '

' ' 0!

22 2 !' &

3(&' : 'A=F< @<@' C< C; < ' C< C' 9' A &' 22 &' A ' C<A?< 9' E< ' 1=' . ;A6=' E<;< GB;<&' C1=' 1 < 1 =' BG;1?C ' A @' ?< <; B=' N DB ' 'F . G6< <1 <PG<;1< F< C< A@@<@' A' ?;<A ' EA ' 9' @<F1I ' 9'FCA;AF <;'N A @&'B 9 ; B A <6 &' '+;1 F< CA@' . ;< <<@' 9' = ;< ? C' 9'E166' A @' G<;0 =<I<;A F<' < 9 B @' ' C1=' AFF<==1 ' C< 91 A F<=' 1 ' @1= ;@<;&' C< O I<; . < ';<?A;@<@' E1 C'F < . G &'GBD61F' G1 1 '<PF1 <@' A @' 1;;1 A <@& A @' C< G;1I16<?<@' D @1<=' 6<A?B<@' ?< C<;' A?A1 = '<I<; '=G<F1<=' 9';<9 ; . ' C< - 1 ?' = 6' 9B; C<;'1 F;<A=<@' C< @1991FB6 1<=' 9'C1=' G =1 1 'D 'FC =1 ?' A=' C1=' . < ;' 6@' AB;<GA=&' EC ' CA@' D<< ' C< DK<F '1 ' C< G;<F<@1 ?' ;<1? ' 9' C< CA ;<@' 9' A@A . < @< + . GA@ B;&' EC .' C< CA@' 99< @<@ ' B1=' : 'C G<@' CA 'C< CA@'=<6<F <@' A'=A?<&' DB 1 '9 'CA@' D A1 <@' 6 ' A' 9;1I 6 B=' F B; 1<;' C1=' 1 1= <;' C B?C ' CA ' C< E B6@' ;< @<;' C1 . =<69' G GB6A;' D ' ;<FA661 ?' C< 6@' +A1 61A . < =&' DB ' > <E' ' C E' ' . A><' C< . '=BD . 1 ' 'B=<9B6' A @'<991F1< ';<9 ; . =' C< ' E<;< ';<1 = A66<@' ' C< C' 9' I< . D<;&' A @' AB;<GA=&' 9 ;' C< =A>< 9'G; FB;1 ?' 9 ;' C6 A6' AB C ;1 'A' 96<< 1 ?' G GB6A;1 &' ;A1=<@' BG' A?A1 = '1 ' =<;1 B=' @A ?<;=' 1 ' 61<' 9B B;<

ABG< B' A @' DDW' <;;A ' CA@' 9A66< ' D<9 ;< C< F6A . B;=' 9' k1<' G< G6<&' A @' AB;<GA=&' EC 'A ' CA ' 1 . < EA=' A P1 B=' 9 ;' C< =BGG ; ' 9' GBD61F' G1 1 &' ;<G6AF<@' C< . 'D ' . < ' EC 'G ==<==<@' 1 =' F 91@< F<' 1=' FC 1F< 9<66' BG ' B;? &' A' . A ' 9' A' 91; . ' A @'KB@1F1 B=' FCA;AF <;&' A6;<A@ ' 9A . B=' 9 ;' C1=' SA;?< G 61 1FA6' I1<E=&' EC ' CA@' ;<F< 6 ' D A1 <@' A' G6AF< 1 ' C< - 1 ?3=' B F16' A=' 1 1= <;' 9' A;1 <&' A @' EC .' AB;<GA=' E' . A@<' ' . G ; 66<; 0< <;A6' 9' C< 1 A F<=' ' C< 9 66 E1 ?' <A;' C< B F16' A=' G< <@' ' A . 1? '@< A6<=C<;D<=&' A' . A?1= ;A < 9' C< C1?C<= ' . <;1

A @' A' 9;1< @' 9' B;? (' EC .' C< A==1= <@' 1 ' C1=' IA=' G<;A 1 = ' 1=' @<GA; . < ' EA=' C< - 1 ?3=' C B=<C 6@(' A @' C< @1=G =A6' 9' *<' ' ' - -# 0' ' ADB=<' 9' EC1FC' EA=' ' D< 9<A;<@' EC16=' C< ' ;< . A1 <@' 1 ' C1=' CA @=' C< C<;' 1 96B< 1A6' . < . D<;=' 9' C< B F16RE<;< 61< @< 1; . <= 16(' - <<G<;' 9' C< <A6=' N C< B ' 9' A1 ' O<; . A1 (' 1 1= <;' 9' A;(' A @' <;?< <=(' 1 1= <;' 9 ;' ;<1? ' 99A1;=

?B1=' : ' ' A=F< @1 ?' C< C; <' CA@' =BGG;<==<@' C<' 1 . G = ' 9' C<' K B=' FFA=1 (' A @' 1<6@1 ?' A=' . BFC' ' C< @1F A <=' 9' C1=' E ' C<A; ' A=' ' C< A@I1F<' 9' E1=<' . 1 1= <;=(' AD 61=C<@' ; B;<=(' A @' C< 6AE' EC1FC' ;< @<;<@' C< A166AD6<=' A6 <' 61AD6<' ' GA ' @B 1<=' (B ' B;? ' G6A <@' . ;<' <P < =1I<' ;<9 ; . =(' A @' @<I ?' A66' C1=' FA;<' ' C< G; . 1 ' 9' C<' CAGG1 <==' 9' C< G< G6<(' P . @W; >' C< =BGG;<==1 ' 9'A' IA=' B . D<;' 9'=<; I1 B@<=' A @' DB;@< = . <' G;1I16<?<=(' A @' 1 ' EA=' 9' C1 . ' CA ' A6<=C<;D<=' =A1@(' [' <' CA=' C<' C<A@' 9' (AF ' A @' C<' C<A; ' 9' 3 VG1 A6 ~' <' E1=C<@' ' . A><' C< D6<==<' F ;1DB <' ' C<' AP<=' 1 ' C<' =A . <' G; G ; 1 ' =' C< C1;@' = A <' N A @' @<=1;<@' A6= ' D ' . <A =' 9' G; I1 F1A6' A==< . D61<=(' ' AFFB= .' C< A 1 ' ' C<' @1=FB==1 ' 9' . A <;=' ;<6A 1 ?' ' C< GBD61F' E<69A;<' <' G6A <@' E1 C' A6<=C<;D<=' A' = = < .' 9' A@ . 1 1= ;A 1 ' EC1FC' E B6@' CAI<' =G;<A@' A' =G1;1 ' 9' FA6 .' C; B?C B ' ;A F<(' D ' @<= ; 1 ?' A66(' ADB=<=(' A @' EA;@=' C1=' < @' C<' G; FB;<@' C<' 1==B<' 9' <@1F =' EC1FC' ;<G6AF<@' C<' F ; IW<=' D ' A' ;A <' <JBA66 ' 6<I1<@' BG ' A66' F6A==<=(' ;< <= AD61=C<@' 9;<< ;A@<' 1 ' ?;A1 ' C; B?C B ' C<' EC 6<' 1 <;1 ;' 9" C<' >1 ?@ . (' A @' AD 61=C<@' EA;@< =C1G=' A @' F ;G ;A 1 =' C<' G;1I16<?<@' F6A==<=' 1 . . <@1A <6 ' DB;= ' '9 ; C' 1 ' F . G6A1 =' A @' . B; . B;=(' C<' +A;61A . < =' ;<9B=<@' ' ;<?1= <;' C<=<' E1=<' <@1F =(' A @' 1 ' EA=' <F<==A; ' ' . A><' B=<' 9' C<' G E<;=' 9'A' (<@' 9' SB= 1F<' C<' GC16 = GC<;=' A @' C<' <F . 1= =' ;1B . GC<@N' DB ' A' G E<;9B6' 6<A?B<' EA=' 9 <@' A ' C<' B; ' A?A1 =' C<' . 1 1= <;=' 9' ;<9 ; . ' +6AF<@' D< E<< ' A' B ?' - 1 ?' 9' ' <PG<;1< F<(' A @' A ' 6@' F B; 1<; ' . 1 1= <;(' B;? ' 9 B @' C1 . =<69' 1 ' A' @1991FB6 ' G =1 1 ' 9' C<' CA@' CA= < <@' ' <PG6A1 ' C1=' G; K<F =(' C<' E B6@' ' CAI<' D<< ' B @<;= @(' A @' E B6@' CAI<' B=<6<==6 ' F . G; . 1=<@' C1=' F;<@1 ' <' <I<;' I< B;<@' ' ;<I<A6' C1=' IA=' G6A ' 9 ;' C<' ;<9 ; . ' 9' CW' ?< <;A6' A@ . 1 1= ;A 1 (' DB &F 91 <@' C1 . 0 =<69' ' G;<GA;1 ?' B1=' : ' ' 61= < ' ' 1 ' A ' = . <' 9B B;<' G<;1 @(' ' C< ;<9 ; . ' 9' C<' . =' =<;1 B=' ADB=<=(' A @' ' G 1 1 ?' B ' ' C<' - 1 ?' C< = ; . =' EC1FC' C;<A < <@' C1=' ;<1? ' =C B6@' ' C< 61; <' D<' = ;< ? C< <@' D ' =A6B A; ' 1 = 1 B 1 =' C<' 9AB6 ' 9' B;? 3=' G6A ' EA=' CA ' 1 ' ;<JB1;<@

9 ;' 1 =' <P<FB 1 ' CA ' B;? ' C1 . =<69' =C B6@' 61I<' E< ' <A;=&' A @' CA ' C<' +;1 F<' =C B6@' G ==<=='=B991F1< '911 . <==' 9' E166' ';< A1 '1 =' AB C ;' 1 ' C1=' F B =<6=&' 1 ' =G1 <' 9' C<' GG =1 1 ' 9' C1=' 9A . 16 &' C1=' B; &' A @' C<' G;1I16<?<@' F6A==<=' =' =BFF<==' EA=' 1 . G ==1D6<' ; . @<;' A' . A;FC' = ';<A@16 ' AFF<==1D6<' A=' EA=' B1=' : ' '@1I<;=<' A @' F ;A; '1 <;<= =' A6<=' C<;D<=' C1 . =<61K' A6 C B?C' 1 =G1;<@' E1 C' C<' D<= '1 < 1 =&' CA@' '=BF0 F<<@<@' 1 ' AD 61=C1 ?' ' '- -# !' EC1FC' @<G;1I<@' F1 1M< =' 9' C<1;' 61D<; 'E1 C B 'A ' ;1A6&' ;' 1 '=BGG;<==1 ?' C<' . = ; B=' ADB=<' 9'6< <;=' 9' ;<=G1 <' EC1FC' E<;<' ?;A <@' '@<D ;=' 1 '9AI B;' A ' B; &' '< AD6<' C< .' '@<6A ' ;' @<9<A ' C<1;' F;<@1 ;=' <' EA=' =FA;F<6 'AD6<' ' . A><' = . <' =61?C ' ;<@BF 1 ' 1 ' C<' ;B1 B=' 6BPB; ' 9' C<' - 1 ?3=' C B=<C 6@&' A @'C1=' . =' KB=' G; F<<@1 ?=' CA@' A6;<A@ ' ?1I< ' ;1=<' ' A' C B=A @' F6A . B;=

&' K<A6 B=' 9' 61<' G GB6A;1 '< K <@' D ' B;? &' A @' 9' C1=' 1 96B< F<' I<;' C<' 11 ?&' AB;<GA=' C1 . =<69' A; B=<@' < . 1<=' A? . =' C<' AB' 9' C< E ' . 1 1= <;=&' A @' A6A; . <@' C<' - 1 ?' E1 C' ;<=G<F ' ' C<' @A ?<;=' CA ' . 1?C ' A;1=<' 9; .' C<' =G1;1 ' 9' C<' <E'= = < . ' A6<=C<;D<=' G<;F<1I<@' C<' E ;>1 ?=' 9' C<' +;1 F<3=' 9<<D6<' . 1 @&' A @' =< '1 ' C1=' ;<=1?0 A 1 &' EC16=' B;? ' AEA1 <@' 'D<' @1=?;AF<@' B1=' : ' CA@' =A1@' 9' C1 . &' [' '1=' 6 ' ' B;? 'A @' 'EC '6 I<' C<' G< G6W&`' A @' C<' @1= . 1==<@' C1 . ' ' C<' G GB6A;' . 1 1= <;=' =BFF<<@<@' F B; 1<;' . 1 1= <;=N C<' = = < . ' 9' ? I<; . < ' EA=' A6 <;<@' A @' C<' ;<9 ; . =' E<;<' ADA @ <@' '5 6B? &' 9 ; . <;6 ' ? I<; ;' 9' '% . 1 ? &' A @' C< ' AD 1B<AB&' ;<G6AF<@' =BF0 F<==1I<6 &' A @' E1 C B ' =BFF<==&' C1=' ?;<A ' . 1 1= <;N A @' A9 <;' C< . ' C<' ?< <;A6' . A A?< . < ' 9' C<' 0 I<; . < 'A?A1 ' 9<66' 1 ' C<' CA @=' 9' A ' BG;1?C ' . A ' EC ' EA=' < @ E<@' E1 C' ?;<A '91 A F1A6' AD161 1<=' <F><;&' A' 0< <I<=<' DA ><;&' C<' < I ' 9' C1=' ;<GBD61F&' EA=' . A@<' C<' F <A?K1<' 9' AD B;<AB&' A @' =BFF<<@<@' C1 . '1 ' 222' B1=' : ' CA@' AFF ;@1 ?' ' A F1< ' FB= .' A>< ' C<' A C' ' <P <; . 1 A <' C<;< 1F=&' A @' <F><;' EA=' A' +; <= A N' DB ' =BFC' E<;<' C1=' ;<GB A 1 ' A @' C<' 1 . . 1 < F<' 9' C<' G<;16&' CA ' C<' EA=' G6AF<@' D ' AB;<GA=' C1 . =<69' A ' C<' C<A@' 9' C<' 91 A F<=' E1 C' C<' 1 6<' 9'%1;<F ; 0< <;A6 ' <F><;' . A@<' ? @' 9A1 C' A @' G; D1 ' C<' DA=1=' 9' C1=' # < . &' EC1FC' F =1= <@' 1 ' C<' ;<@BF 1 ' 9' BL@7><$B+A' B7' C<' <PG< @1 B;<' 'A' 6<I<6' E1 C' C<' ;<F<1G =&' '_. A><' C<' A 1 A6' AP<=' =<; I<' '@<9;A ' C<' A 1 A6' <PG< =<' 1 ' ;@1 A; ' 1 . <=&' ' CAI<';<F B;=<' '6 A =' 6 'EC< 'F1;FB . = A F<=1 . G<;1 B=6 ';<JB1;<@' C< . &' A @' 'CAI<' C<' AP<=' A==<==<@' D ' C<' G; I1 F1A6' A==< . D61<=' C<=<' G6A =

E<;<' E1=<'Ñ A @' FAG1 A61= =' CA@' F F<1I<@' = ' 611?C' A ' G1 1 ' 9' C<' A6< =' A @' C <= ' 9' <F><;&' CA ' C1=' A . <' A6 <' EA=' A' =B991F1< 3?BA;A <<' 1 ' C<1;' < <=&' A @' ;< <= AD61=C<@' F 91@< F<' A . ?= ' C =<' ' EC . ' C<' 0 I<; . < ' AGG61<@' 9 ;' 6 A =

<F><;' G6AF<@' ;A F<' 1 ' A' 91 A F1A6&' G =1 1 ' EC1FC' < AD6<@' C<;' W' BGG ; ' A' EA;' EC1FC' CA@' A' ?;<A 1 96B< F<' 'C<;' @<= 1 1<=' D ' AFF<6<;A 1 ?' C<' FB;;< ' 9' 1 =' 1 <66<F ' A @' C<' G; ?;<==' 9' 61DW;A6' 1@<A=' C1=' EA;' EA=' CA ' FFA=1 <@' D ' C<' ;<I 6 ' 9' C< ?61=C' F 6 1<=' 9' ; C' . <;1FA' A?A1 = ' C<1;' . C<;' F 1 . ; ' ?6A @&' I<;DPB;@< <@' D ' @<D ' A9 <;' C<' G<AF<' 9' 2*8&' CA@' < @<A I B;<@' ' . A><' 1 =' . <;1FA ' F 6 1<=' F ;1DB <' '1 =' AP<='Ñ A @' C<' 6A <;&' C@ I1 ?' D<< ' 1 ' C<' CAD1 ' ; }+@7>' B#B0' 9' AP1 ?' C< . =<6 I<=&' A @' 9' =<<1 ?' C<' =B . =' 6< I1<@' ' C<1; +$@A' ,552' = 16' <PG< @<@' ' @<9;A ' C<' <PG< =<=' 9' C<1;' 0 I<; . < &' . A@<' A '< <;?< 1F' ;<=1= A F<' ' C<' <E' G;< < =1 =' 9' C<' . C<;'F B ; ' C<' = ;B??6<' F . . < F<@' 1 ' 228' ' C<' 1 . G =1 1 ' D ' C<' ?61=C' 0 I< . GA< ' 9' A' F =1@<;AD6<' AP' ' <A&' EC1FC' EA=' F = . <@' 1 ' < ;0 . B=' JBA 1 1<=' 1 ' . <;1FA ' C<' 1 CAD1 A =' 9' (= &' C<' FAG1 A6' 9' A==AFCB=< =&' ;<9B=<@' '?1I<' A@ . 1 A F<' 1 ' C<1;' G ; =' 'FA;? <=' DB;0 @< <@' E1 C' C1=' AP&' A @' C<' G GB6AF<&' ; 1K=<@' 'A' = A <' 9' 1;;1 A 1 &' C;<E' C< . ' 1 ' C<' =<AN' EC<;<BG ' C<' ?61=C' 0 I<; . < ' 1 . . <@1A <6 ' ;@<;<@' 0< <;A6' 0A?<' '><<G' CA ' G ; ' 1 ' A' = A <' 9' D6 F>A@<' (B ' C<' =G1;1 ' 9' ;<=1= A F<' CA@' D<< ' A; B=<@&' A @' @<GB 1<=' 9; . ' A66' C<' G;1 F1GA6' @1= ;1F =' 9' C<' F 6 1<=' A==< . D6<@' A ' +C16A@<6GC1A' A ' A' ?< <;A6' ?;<==&' A ' EC1FC' EA=' @;AE ' BG' A @' AFF<G <@' 1 ' <G < . D<;&' 22 &' C<' 9A . B=' %<F6A;A0 1 ' 9' 1?C =&' EC1FC' EA=' C<' G<' 9' A66' C =<' EC1FC' E<;<' = ' A9 <;0 EA;@=' . A@<' 1 ' B; G<' ' C<' ?;<==' A B66<@' C<' G E<;=' 9' A66' C<' ?61=C' 991F1A6=&' ;@<;<@' A' 6<I ' 9' C<' A 1 A6' . 161 1A&' A @&' G; F6A1 . <@' 0< ;?<' A=C1 ? ' ?< <;A61==1 . ' 9' C<' 9 ;F<=' . <' 91;=' =BFF<==<=' 9' C<' . <;1FA ' . 161 1A' <PF1 <@' C<' < CB=1A= . ' 9' C<' F 6 1= ='Ñ C<' 1 =B;;<F0 1 ' D<FC . <' ?< <;A6&' A y|' C<' FAG B;<' 9' (= ' D ' C<' 1 =B;?< =' ;A1=<@' C<' G GB6A;' <PF1 < . < ' ' 1 =' C<1?C ' ' 6< ? C' C<' ?;<==' GBD61=C<@&' 1 ' 22*&' C<' F ' 9' @<G< @< F<&' D ' EC1FC' 1 ' F = 1 B <@' 1 =<69' A' 9;<<' G E<;&' A @' 1 @<G< @< ' 9' C<' ?61=C' G E<;' %1G6 . A 1F' A?< =' E<;<' 1 . . <@1A <6 ' @<=GA FC<@' ' C<' IA;1 B=' F B; =' 9' B; G<&' ' D A1 ' C<' ;<F ? 1 1 ' 9' C<' 1 @<G< @< F<' 9' C<' . <;1FA ' 6 1<=&' A @' (< KA . 1 ' ;A >61 &' A=' F<6<D;A <@' 9 ;' C1=' @1=F I<;1<=' 1 ' =F1< F<' A=' 9 ;' C<' =<;I1F<=' C<' ;< @<;<@' ' C1=' F B ; &' EA=' =<6<F <@' D ' C1=' F B ; ' ' G6<A@' C<' A 1 A6

FAB=< A ' C< F B; ' 9 <;=A166<=& A @ ' = 61F1 ' C< =BGG ; ' 9 ;A F< A?A1 =1 ?6A @ ' C< =1 . G61F1 ' 9 C1=' F = B . < A @ C1=' . A <;=' F;<A <@ A ?;<A ' =< =A 1 ' 1 ' +A;1=& A @ C< ?< <;A6 9<<61 ?' 1 ' C1=' E ' 9A I B;' CA=0 < <@ C< F F6B=1 ' 9 C< <? 1A 1 =' D< E<< ' ;A F< A @ C<1 =B;?< ' F 6 1<=' #

C< B C 9 ;A F<& <A?<;' 9 ;' ?6 ; & DB; ' ' ;<GA1;' ' C< . <;1FA ' = 16 C< 6 ==<=' =B99<;<@ 1 ' C< 6A < EA;& A @ A9A < <& C< ' E< ' <A;=' 9 A?<& @1= 1 ?B1=C<@ C1 . =@9 D ' C1=' ?< <; B=& A6 C B?C 9;<JB< 6 ' D<61<@& @<I 1 ' 9 ;' C< FAB=< 9 C< 9;<<@ .' 9 G< G6<= < B F1 ?' C< G6<A=B;<=' 9 A' . =' D;1661A ' A @ < I1AD6< <P1= < F<& C< <J1BGG<@ A' I<==<6 A ' C1=' E ' <PG< =<& A @ 99<;<@ C< A==1= A F< 9 C1=' =E ;@ ' C< . < FA ' F 6 ' 1= =' KB=' EC< ' C< ' E<;< F;B=C<@ D ' . A ';<I<;=<=' <' EA=' E1661 ?' '=<; I< A=' A' =1 . G6< G;1IA < 1 ' C< ;A >=& DB ';<F<1I<@ A' F . 0 . 1==1 ' A=' K AK ; 0< <;A6 A @ C< 9;1< @=C1G 9 A=C1 ? & A ';< FC . < ' 9 C< . =' @1= 1 ?B1=C<@ 9A . 161<=' 9 66 E<@ C1=' <PA . G6<' C< ?61=C 0 I<; . < & 9 EC1FC ;@ ; C EA=' C< ' C< C<A@& F . 0 G6A1 <@ 9 C1=& A @ AI< ?<@ 1 =<69 D ' = . < AF =' 9 A??;<==1 ' A?A1 =' ;A F<' B1=' : ' C<=1 A <@ 9 ;' = . < 1 . < ' < <;' BG ' C = 161 1<=' N DB ' A '6< ? C& 1 ' 22 & A9 <;' C< . < . ;AD6< DA 6< 9 A;A ?A& 1 ' EC1FC 0< <;A6 (B;? <& A ' C< C<A@ 9 =1P C B=A @ . < & EA=' F . G<66<@ ' 6A ' @ E ' C1=' A; . =& ;A F< F F6B@<@ A' ;<A ' 9 A661A F< A @ F . . <;F< E1 C C< . <;1FA =N EC<;<BG ' ?6A @ ;<FA66<@ C<;' A . DA==A@ ;& A @ EA;' EA=' ;<= 6I<@

'96<< ' 9 E<6I< =C1G=' 9 C< 61 <& F . . A @<@ D ' C< B ' @3 = A1 ?& =< ' =A16 9; .' B6 ' 9 ;' . <;1FA& A @ . A@< A' IA1 ' A < . G & 1 @<G< ' 1 ' F F<; ' E1 C A=C1 ? 3=' A; . & ' A>< <I;G ; & 1 ' @< <& 22 28 C @< =6A @& < 9 CW ?61=C A;=< A6=' ' C< 2 C SB6 &'Y1C C< =A . < <A;& C< ;< FC @ . 1;A6 @3 ;I1661<;=' < F B <;<@ @ . 1;A6 -<GG<6 A ' C< < ;A F< 9 C< CA <6' C< E '96<< =' F =1= <@ =<I<0 ;A66 ' 9 C1; ' I<==<6=& A @ A9 <;' CAI1 ?' 9 B?C ' 9 ;' A' EC 6< @A ' GA; <@ ' ;<91 ' E1 C B ' CAI1 ?' 6 = ' A' =1 ?6< I<==<6 ' <1 C<;' =1@<' C1=' DA 6< EA=' A ' 91;= ' F<6<D;A <@ 1 ' ;A F< A=' A' D;1661A ' I1F ; ' C< F @BF ' 9 C< %B>< @< CA; ;<=& =BD=<JB< 6 ' 9A . B=' D ' C< A . < 9 C< %B>< 9 ;6<A =& EC ' F . . A @<@ C< ;<A;' ?BA;@ 9 C< 96<< & A9 <;' CAI1 ?' D<< ' <P ;AIA?A 6 ' G;A1=<@& EA=' A9 <;EA;@=" B KB= 6 ' @<F;1<@& A @ C< -1 ?' ;< . I<@ C1 . ' 9; .' C< AI ' D ' . A>1 ?' C1 . ' A' F 6 <6 ?< <;A6 9 CB==A;=

@GB<$B+' B3 >0
3@K@<<@' <B' <M@
?>DA@' B3 ; @7$0
?>+$+C@L@+
C@+BB

2*

C1=' AGG 1 . < B @<;' C< F1;FB . = A F<=E EA=' A1# 1 =B6 A @ C< %B><' CA@' = 166 . ;< D1 <;' A99; =' =B99<;A @ C< F<9 ; C AGG<A;<@ @<I <@' D ' A' =G<F1<=' 9'W;B<6 9A A61 ' ' A ' B 9 ; B A < F<6<D;1

;A F<' F F6B@<@' E1 C GA1 1 ' C< 9 66 E1 ?' <A;A ' A661A F<' EC1FC' @ BD6<@' 1 =' AIA6 = ;< ? C ' @ . 1;A6=' @3 ;I1661<1'=' A @' %

#D>+?@' S$<M L>$+ ') $#$<>7K' L@7><$ * #55 BD$A' B7CBG>' +$<@C' <M@$7' 3#@@<A ' >+C' <M7@><@+@C ' S$<MBD<' ;<=B6 A' @<=F< ' BG ' ?6A @E EC16=' B ' @3 =C11 ?1 =BGG ; <@' D ' B ' @< 0;A==<' A @' A' S6 < +1JB< =<1M<@' 1 ' C<

166<=' C< 1=6A @=' 9' ' 1 F< ' A @' 0;A A@A' C1=' =BFF<==' ;< A;@<@' C1=' A;;1IA6 1 ' C< 1 <@' A <=A @' C< B 9 ; B A < 0< ;?1A ' <PG<@1 1 < @<@' C< FA . GA1? ' B ' @3 = A1 ?1 1 ' F F<; ' E1 C 0< <;A6 1 F 6 . A@<' A' ;A=C A AF>' BG ' AIA ACE C< FAG1 A6 9' C< G; I1 F< 9' CA ' A . <A @E EA=' ;<GB6=<@' E1 C 6 ==1 ' =G1 < 9' G; @1?1<=' 9' IA6 B;' <' ;A1=<@' C< =1<?< A @' ;< B; <@' ' ;A F<' ' D< =BFF<<@<@' D ' B ' @< 0B1FC< E EC ' C B;AD6 ' . A1 A1 <@' C< = ;B??6< A?A1 = ' C< ?61=C' @ . 1;A6E 0< ;?< @ <

C< EA;' < =A ?B1 <@' C< 9 B;' JBA; <;=' G9' C< ?6 D<' C< ;< FC' 7@+?M' @B+0' ; G=' B @<;' AB@;<B16' A @' ABMB =<1M<@' BG ' < <?A6E aD@>D' 1 ' 37$?>' LA . D1AE R @ 1F;;A' < <3DB ' =B99<;<@E ' C< C<;' CA @E 9;<=C' @1=A= <;=' 1 ' @1A' =' <= AD61=C . < =' 1 ' < ?A6' 9<66' 1 ' C< CA @=' 9' C< ?61=CE A @' + @1FC<;; 'CA@' ' 1<6@' 9 ; 'A @A =' A9 <;' C< ;< FC<=' CA@' D<< ' G< <@' A?A1 = ' 1 ' BFC' E<;<E @B;1 ?' E ' <A;=' a 22 22!bE 1 ' C< E ' C< . 1=GC<;<=E C< G;1 F1GA6' <I< =' 9' C1=' ?;JA ' = ;B??6<E EC1FC' CA@' C1 C<; 'D<< ' G; 6 ?<@' E1 C B ' @<F1=1I<' ;<=1@ =E DB ' EC1FC' EA=' A=' @1=A= 1' B=E C; B?C' 1 =' <PG< =<' A @' 1 =' @B;A 1 E 9 ;' ?6A @' A=' 9 ;' 1 =' 6A < F 6 1<=

' C<' 9 66 E1 ?' <A;' a 2 "bE ?6A @' 9 B @' C< B . D<;' 9'1 =' < < . 1<=' = 1 ' 9B; C<;' 1 F;<A=<@' ' C< ; C<; ' G E<;=E C< . G;<==

@?#>7><$B+' B3' >7;@C' B@><7>#$<R ' 2'' 1 1IB==1AH' C*' -1 ?=' ' DE<F1< ' A @' %< . A;>Y 9 ; . <@' A 0 6<A?B<' ' ;<=1=' 1 =' G;< < =1 =' ;<=G<F 1 ?' C< @ . 1 1 ' G9' C<' =<A=E A @' =1? <@' A' @<F6A;A 1 ' 9' A; . <@' <B ;A61 E D ' EC1FC' 1 ' EA=' A?;<<@' CA ' C< <B ;A6 G E<;=' =C B6@' D< A ' 61D<; ' ' =A16 9; .' G ; ' ' G ; ' 9E 11 @' ' =A16 ' C< F A= =' 9E C< D<661?<;< ' A 1 =' N CA ' . <;0 FCA @1M<' D<6 ?1 ?' ' C< 6A <;' =C B6@' D< 9;<< 9; .' FAG B;<E 19' ' F ;ADA @' ;' 1 < @<@' 9 ;' A@ . 1==1 ' 1 ' A' G ; ' AF BA66 ' D6 F>A@<@' ' C< ; C<; ' G E<;=' A B F<@' CA ' C< ' E B6@'< 9 ;F<';<=G<F ' 9 ;' C<1;' @<F6A;A 1 ' D ' EA;9A;<' 19' <F<==A; E A @' ?6A @E A9 <;' CAI1 ?' . A@<' A

9B 16<'A < . G ' ' D A1 ' C<' A661A F<' 9' 66A @(' EC<;<' C<' <GBD61FA 'GA; ' EA=' . ;<' G E<;9B6' CA ' CA ' 9' C<' A@ C 6@<;' EC1FC' EA=' 9A; 1 . AD6<' ' ?6A @(' CA@' ' = ;B??6<' A?A1 = ' C<'F . D1 <@'96<< =' 9' ;A F<(' C<' 1 <@' A <=(' A @' GA1

C<' . AK ;1 ' 9' C<' ;< FC' 1 1= ; 'EA=' A ' C1=' 1 . <'F . G =<@' 9' . < ' 9' . <;1 'A @' A6< ' <;?< <=' . A@<' C<'>1 ?@ . ' ;<=G<F <@' 1 1=<;1A6' <B' AD; A@N #?B;' A @' A= ;1<=(' = 6@1<;=' E ; C ' 9'C1?C' <= << . (' FA; ;1<@" ' C<' EA;'E1 C'< <;? N A @' <F><;'A99 ;@<@' C<' - 1 ?' C<' . <A =' 9' F 1 B1 ?'1 ' 1=' F<6<D;A <@' - ' ' 9' SA BA; (' 2 (' =C E<@' 9 ;' C<' 91;=' 1 . <' A ' <PF<==' 9' < ' . 1661 =' 9' ;<F<1G =' I<;' C<' <P0 G< @1 B;<(' A @' G; @BF<@' A' =< =A 1 ' A @' 9AI B;AD6<' GBD61F' G1 1 (' EC1FC'1 =G1;<@' AB;<GA=' E1 C' A' ?;<A ' @<?;<<' 9'K<A6 B=

%<<G6 ' 99< @<@' D ' C<' B A 1 . B=' G;A1=<=' 6AI1=C<@' ' A' 1 1= <;' EC . ' C<' ;<?A;@<@' A=' C1=' F;<A B;<(' AB;<GA=' G<;=BA@<@' C<' - 1 ?' CA ' @A ?<;' . 1?C ' A;1=<' 9; . ' C<' GBD61F' @1=FB==1 ' 9' C<' G; F<<@1 ?=' 9'C1=' O I<; 0 . < 'EC1FC' E B6@' A B;A66 ' A;1=<' 9; . ' C<' GBD61FA 1 ' 9' <F><;3=' - ' !' A @' 9; . ' CA ' . < 'A66' C<'G6A =' 9' CA ' = A <= . A 'E<;<' ;<F<1I<@' E1 C' @1=9AI B;' C<' B F16' GG =<@' C< . (' A @' C<' G;1I16<?<@' F6A==<=' = ;B??6<@' A?A1 = ' C<' FA; ; 1 ?' B ' 9' C1=' KB@1F1 B=' ;<9 ; . =' <' <I<;#' C<6<==' =BFF<<@<@(' D ' C<' Q'=1 . G6<' F;<@1 ' A AFC<@' ' C1=' #I ' A . <(' 1 ' <99<F 1 ?' E ' 6 A =' EC1FC' A . B <@' ' 1 < ' . 1661 =N DB ' G<;F<1I1 ?' CA ' C<' ' 6 ?<;' G ==<==<@' C1=' I<;<1? 3=' F 91@< F<(' C<' =< ' 1 ' C1=' ;<=1? A 1 (' EC1FC' EA=' AFF<G <@' ' C<' 8;@' A (' <' 6<9 '1 ' CA @' =B9910 F1< '9B @=' 'F . G6< <' C<' @<F1=1I<' FA . GA1? ' 9' 2 (' A @' C1=' ;< 1;< . < ' EA=' ;<?A;@<@' A=' A' GBD61F' FA6A . 1

C<' A==1= A F<' EC1FC' ;A F<' CA@' C1 C<; ' AFF ;@<@' ' C<' 1 <@' A <=' CA@' 6 ' D<< ' D ' =<A(' DB ' ' C<' C' SB6 (' 2 "(' A' 91;=' K#< FC' @1I1=1 (' B . D<;1 ?'=1P' C B=A @' . < (' @1=< . DA;><@' A ' C @<' =6A @'B @<;' B ' @<' FCA . D<AB Y' C<' A;;1IA6' 9' C1=' G E<;9B6' ;<1 9 ;F< . < (' EC1FC' CA@' D<< ' 6 ?' <PG<F <@(' ;< A 1 . A <@' C<' F B;A?<' A @' < CB=1A= . ' 9' C<' . <;1FA =N C<' ?61=C(' C E<I<;(' =BFF<<@<@' 1 ' D6 F>A@1 ?' C<' G ; 'A ' EC1FC' C<' ;< FC' CA@' @1=< . DA;><@(' A @' CB=(' 166 C<' F6 =<' 9' C<' <A;(';< @<;<@' C<1;'A==1= A F<' A6 . = 'B=<6<==' ?61=C1 ' = B C ; (' C1=' FA . GA1? (. ' 9AF (6 ' D; B?C ' ' C<' 6 1= =' IA1 >7B#$+>' ,52 E

C G<=' ;' ;<I<;=<=' C<' F JB<; ;' 9' A;A ?A(' 0< <;A6' 0A <=(' EA=' D<A <

I' +' B7C@7'<M><'<M@' ; $#$<>7K' BL@7><$B+A' ; $ M<'M>G@' D+$3B++$<K' B3' L#>+' BD$A' " ; >C@' B?M> ; J@>D' ADJB7C$+><@'$+' ?B ; ; >+C'<B' >A + <B+

A ' A . @< ' 1 ' PP 61<; ' A; 61 A' D ' ;@' ; EA661=' A @' C<' EC 6<' 9' C1=' G; I1 F<' EA=' F =<JB< 6 ' 6 = ' ' C<' ; C' ;<A= ' @<G;1I<@' C<' . <;1FA =' 9' <' 9' C<1;' . = ' AD6<' ?< <;A6=' (< <@1F ' 1 . 6@' EC ' EA=' 6<@' 1 ' F;1 . <' D ' C<' <F<==1 1<=' A;1=1 ?' 9; . ' A' @1== 6B <' 619<

;A F<' E' FA . <' ' C<' A1@' 9' C<' 6 1= =' E1 C' A' ?< <; =1 ' . ;<' . A? A 1 . B=' CA ' G;B@< &' F =1@<;1 ?' C<' F @1 1 ' 9' C<;' E '91 A F<=' A @' A@IA F<@' ' C<' 1 <@' A <=' ' NC<' =1 . G6<' PI ;@' 9' ?13<==' C<' 6A;?<' =B . ' 9' =1P << ' . 1661 ' 9;A F=' D B ' C<' =A . <' 1 . <' A' <E' ;< FC' 96<< ' 9' ' I<==<6=' B @<;' @ . 1;A6' @<' 0 ;A==<' =< ' =A16' 9 ;' C<' 166<=' a A;FC' 2 b' A=C1 ? ' EA=' C< ' ;< @<;<@' D ' C<' =<I<;1 ' 9' C<' =<A= ' A6 . = '1 AF 1I<' 1 ' C<' @; C' PIC<;<' C<' CA@' D<< ' K 1 <@' D ' FCA . ' D<A ' E6116= ' C<' ?61=C' GB;=B<@' C<1;' A@IA A?<=' 1 ' C<' B C' 1 ' C<' E ' A; 61 A=' C<' G E<;9B6' A==1= A F<' ;< @<;<@' D ' ;A F<' < AD6<@' A=C1 ? ' ' @< <; . 1 <' BG ' A' G6A ' EC1FC' @<F1@<@' C<' FA . GA1? ' A @' C<' EA;

0< <;A6' 0 ;<< <' <' 9' C<' AD6<=' ?< <;A6=' C<' . <;1FA =' G ==<==<@' F 1 P1A66 'CA;A==<@' C<' I1F ;1 B=' A; . ' 9' ;@' ; EA661=' 9Y# #;Y`YY' C<' ?61=C' CA@' C<' A@IA A?<' 1 ' . = ' 9' C<' < ?A?< . < =' 0;<;A<' ' IC1FC' >' G6AF<' D< E<< ' C<' E ' A; . 1<=' E1 C B ' C PI<I<;' D<1 ?' AD6<' ' D A1 ' A ' @<F1@<@' ;<=B6 =' 1 ' C<1;' 9AI B;' A @' E<;<' A ' 6< ? C' = ' < 9<<D6<@' D ' C<=<' 1 F<==A ' A @' 9B 16<' F 961F =' CA ' 0 ;<< <' EA=' < AD6<@' ' FB ' 99' C<1;' F . . B 1FA 1 =' E1 C' ; C' A; 61 A' ; EA661=' C< ' ;<= 6I<@' ' ADA @ ' A; 61 A' A @' 1 ' F F<; ' E1 C' C<' ;A1 ;' ; 6@' ' =BD@B<' 1;?1 1A' <' . A;FC<@' ' C<' ; C' <99<F <@' A'KB F 1 ' E1 C' ; 6@3=' F ;G=' A @' C< ' F = 61@A 1 ?' C1=' 9 ;F<=' A ' ;>' E ' A' 61 6<' E ' A ' C<' < ;A F<' 9' C<' ;1I<;' ;>' < ;< FC<@' C1 . =<69' C<;<' E1 C' C<' GB;G =<' 9' AEA1 1 ?' A' 9AI . ;AD6<' GG ; P . 1 ' C1=' G; I<@' C1=' ;B1

A=C1 ? ' 9; . ' C1=' FA . G' D<9 ;<' <E' ;>' 9 66 E<@' A66' C<' . I<0 . < =' 9' C<' IA;1 B=' C = 16<' F ;G=' A @' ' 6<A; 1 ?' C<' =1 BA 1 ' 9' ; 0 EA661=' A @' C1=' A; . ' A ' ;>' E ' 1 . . <@1A <6 ' F F<1I<@' C<' C G<' 9' G<;9 ; . 1 ?' A' D;1661A ' 9<A ' D ' <99<F 1 ?' C<1;' FAG B;<' <' GB 'C1 . =<69'1 ' F . . 1 . 1FA 1 ' E1 C' FCA . D<AB' A @' @ . 1;A6' @<' 0 ;A==<' A @' 1 ' ;@<;' C<' D< <;' ' @<F<1I<' C<' < < . ' E1 C' ;<=G<F ' ' C1=' G6A =' 1 I<= <@' <E' ;>' A @' D<?A ' ' D<=1<?<' 1 N C< ' =B@@< 6 ' E1 C@;API1 ?' E1 C' C<' DB6>' 9' C1=' A; . ' A @' 6 ' 6<AI1 ?' D<C1 @' C1 . ' <' @1I1=1 ' ' C 6@' C<' < < . ' 1 ' FC<F>' C<' ;AI<;=<@' +C16A@<6GC1A' A ' C<' C<A@' 9' C<' F . D1 <@

c2 ; 2 ! ^ ' B 7' '

D A1 <@' B . <; B=' =BFF<==<=' AI1 ?' D<< ' 9 B;' 1 . <=' IA JB1=C<@' C E0 <I<;' D ' 1;' ;<' <' C< ' D<A ' A' ;< ;<A ' A @' <IAFBA <@' C<' A; A 1F' A9 <;3CAI1 ?' G6B @<;<@' A6' C<' ?61=C' G ==<==1 =

C<' (;1 1=C' G E<;' 1 ' C<' A=' CA@' <I<;' D<< ' 1 ' ?;<A <;' G<;16' CA ' A ' C1=' G<;1 @ ' C<' ;< FC' 96<< ' C<' A; ;1IA6' 9' EC1FC' CA@' D<< ' 6 ?' ' A B F<@' AGG<A;<@' A ' 6< ? C' A ' C<' F . . < F< . < ' 9' 2 ' ' C<' F A=' 9' ; . A @<6 ' ' EA=' F . . A @<@' D ' B99;< ' C<' @ ' 9' C<' ;@<;' 9' A6 A' <' 9' C<' ?;<A <=' =<A . < ' 9' EC . ' ;A F<' FA ' D A= ' B99;< ' CA@' A6;<A@ ' ;AG1@6 ' G; I1@<@' 9 ;' C<' @<9< F<' 9' C<' %B FC' F 6 ' 9' C<' AG<' 9' 0 @' G<' A @' C;<<' ?6 ;1 B=' A6 C B?C' 1 @<F1=1I<' DA 6<=' EC1FC' C<' 9 B?C ' E1 C' C1=' E ; C ' ;1IA6 ' 1;' @EA;@' B?C<=' CA@' . A@<' C1=' A . <' 9A . B=' 1=' G;<=< F<' ;<A 1 . A <@' C<' C G<=' 9' A1@<;' 61' EC ' = 166' . <@1 A <@' D ' . <A =' 9' A' 6<A?B<' D< E<< ' A66' C<' A 1I<' G;1 F<=' C<' <PGB6=1 ' 9' C<' ?61=C' 9; .' 1 @B= A ' 1=' @<A C' GB ' A' =B@@< ' < @' ' C<=<' G; K<F =N C<' 9 ; . 1@AD6<' B6 A ' 9' = ;<' <PG1;<@' A ' C<' F6 =<' 9' C<' <A;' a 2 b' 6<AI1 ?' ' C1=' = ' 1GG ' AC1D' C1=' C; <' C1=' A; . ' C1=' F B;A?< , <I<; C1 ?' <PF<G ' C1=' ?< 1B=

B99;< ' 1 ' C<' . <A 1 . <' GB;=B<@' C1=' ?6 ;1 B=' FA;<<;' ' C<' F A=' 9' ; . A @<6N 1GG ' AC1D' =<F @1 ?' C1=' G<;A 1 =' D ' 6A @ ' <' IA 0 JB1=C<@' C<' ?61=C' ?< <;A6' A C<E=' 9A . B=' 9 ;' C1=' A ; F1 1<=' A @' EC ' CA@' . A==AF;<@' 1 ' C<' F1 ' 9' . A G ;<' C<' EC 6<' 9' C<' 1 CAD1 A =' A @' C<' 9 B;' CB @;<@' E1I<=' 9' A1@<;' A @' 1GG ' 0 @<6 B;' D<1 ?' D<=1<?<@' D ' C<' ?61=C' B99;< ' CA= < <@' ' 1 = ' ;<61<9' A @' < F B <;<@' E1 C1 ' =1?C ' 9' C1=' F1 ' C<' 96<< ' 9' 1;' @EA;@' B?C<=' 6 61 B?C' C<' 9 ; . <;' CA@' DB ' 919 << ' I<==<6=' A?A1 = ' <1?C << ' C<' ?A1 <@' C<' A@IA A?<' A @' 0 @<6 B;' EA=' =AI<@

C<' G;<61 . 1 A;1<=' 9' G<AF<' E<;<' E' =1? <@' 1 ' B; G<' ' C<' C1?=' =BFF<<@<@' C<' ;1<=' 1 ' C<' ?61=C' 1 1= ; ' ;@' ; C' EC ' CA@' @1=G6A <@' C<' B . = ' A;@ B;' 1 ' FA;; 1 ?' ' C1=' D6 @ ' EA;' CA@' D<< ' =BFF<<@<@' D ' F>1 ?CA . ' CA;6<=' P' A @' (B ; ><N A @' A' 9<E' . C=' A9 <; EA;@=' C<' = ' 9' ;@' CA CA . ' 1661A . ' +1 ' EA=' < ;B= <@' E1 19f' C<' FA;<' 9' C<' 91 A F<=' C<' <E' A@ . 1 1= ;A 1 ' B;?<@' 0< ;?<' ' ' . A><' A' G<AF<' EC1FC' EA=' =1? <@' A ' <;=A166<=' ' C<' 8;@' G<g<=1? <@A' <G < . D<;' 2 8' D< E<< ' ?6A @' ' C<' <' GA; ' A @' R ;=A 1 A' 12 8' +;A F<' GA1 ' A @' C<' 1 <@' A <=' EC =<' 1 @<G< @< F<' EA=' ;<F ?0 1=<@' D ' 1 ' ' C<' C<;' ;A F<' @<;1I<@' 61 6<' G; 91 ' 9 ;' C<;=<69' 9; .' C<' 1 . . < =<' =AF;191F<=' =C<' CA@' . A@<' ?6A @' ;<= ;<@' ' C<;'

) "' ' ' k ' ' 8 * -'

1 ' . <;1FA C 1=6<= 9 ' BF1A A @ DA? 'N A @1 ' @1A + @1FC<; ; 'N A @ ?BA;A <<@ 'C<; 1 ' 9;1FA C G ==<==1 ' 9 C ;1I<; < <?A6 A @ 1 = @<G< @< F1<=N A @ ' C F A= ' 9 A6ADA; ACW A @ A ' <= AD61=C ; . < 'A ' B;A ' C E ' A 1 = =1? <@ . ;< I<; A ;<A ' 9F . . <;F<' ' ?6A @ @1@ 'F F6B@ G<AF E1 C 1GG ' A611D A @ 66A @ 1 . 16 C 9 j I1 ? <A; ' ;A F EA= 1 @<D <@ 9 ;' 1 . G ; A ' A==1= A F ' C 6A <;' G E<; A @ <=G<F1A66 ' '1 = <GBD61FA ' GA; 'N A @ ;<EA;@<@ 1 = =<; I1F<= D 'A =CA . <9B6 ADA @ . < 'EC< 1 ' 2 C A;@< ' ;<@<;1F 1661A . ' - 1 ? 9 +;B==1A ;<@<;1F C 0 ;<A 3= <GC<E A @ D; C<; ' 1 6AE 9 C +;1 F 9 ;A ?< =BGG ; <@ C ;A ?<GA; A @ ;<= ;<@ C A@ C 6@<;' D ' 9 ;F 9 A; . = ' ; .' CA ' 1 . < C 1 96B< F 9 + . ==1A A @ ?6A @ EA= =BD= 1 B <@1 ' 66A @ 9 ;' CA ' ,' ;A F<

AB;<GA= @1<@ =C ; 6 'A9 <;' C @1=?;AF 9 <F><;'N . @ ;A F# A @ C<;' 0 I<; . < ' C< 'G;<=< <@A = ;A ?< =G<F AF6 9 <P ;A ;@1 A; 'F 0 ;A@1F 1 =A @ 9 C . = ' F . G6< < @1=A?;<< . < 'D< E<< '1 = 6AE= A @ 1 = AF 1 = ' CB= EC< ' C ;< F6P A; . 'E< ' ' C A==1= A F 9 A <GBD61F C F = 1 B 1 ' 9 EC1FC EA= 9 B @<@ ' C G;1 F1G6< 9 <JBA61 A ;B6 EA= . A@< CA ' =C B6@ D< A66 E<@ ' D A1 ' C ;A > 9 991F<;' DB ' C =< EC ' F B6@ G; I< 9 B;' @<?;<<= 9 D161 'a 2 N A @ CB= EC< ' GBD61F G1 1 ' EA= ;B 1 ? = ; ?6 '1 ' 9AI .' 9 C GC16 = GC<;' EC =< 1; ;<61?1 B= E;1 1 ?= F ;1DB <@ 9 ;' C . = 'GA; ' ' C @<= ;BF 1 ' 9 C;1= 1A 1 C 0 I<; . < ' . A1 A1 <@ C ;1? B;' Y 9 A' %;AF 1A 'F @< A?A1 = ' C +; <= A = A @ C 6A <;' F B6@ '<I< ' D A1 ' 9; .' C +A;61A . < 1 ' 22 A'6<?A6 . <A = 9 <= AD61=C1 ? C<1;' . A; ;1A?<= A @ =<F . ;1 ? C = F1A6 G =1 1 ' 9 C<1;' FC16@ ;< ' C @<91F1 ' 9 C ;<A=B; 'CA@ 1 F;<A=<@ @B;1 ? C EA;'N A @ 1 'EA= 1 ' IA1 ' CA 9 ;' C GB;G =< 9 @<F;<A=1 ? 1 B1= : '?AI A '<PA . G6< D ';<61 0 JB1=C1 ? A' G ; 1 ' 9 C1= C B=<C 6@ A @ C1= ?BA;@= 9 ;' ' <9 66 E<@ 1 ' S 6 '@< 6<B; 'A @ %3 ; . <== ' =BFF<<@<@ <F><;' 1 ' B; 'E1 C B '

) $+$A<7K' B3' >#B++@E' ,5 2

D<1 ? AD6 '@1=F I<;' A' ;< . <@ '9 ;' C1='N A @ A6 <=BF0 F<<@<@ C< .'1 ' C . A A?< . < ' 9 C 91 A F<= C1= . A EC ' EA= D;1661A ' A @ <6 JB< A @ EC =< FCA;AF <;' EA= A' F . D1 A 1 ' 9 9;1I 61 ' A @ AB@AF1 A@ G <@ A' = = < . ' @1;<F 6 ' GG =<@ ' 61A ' 9 <F><;'N < @<AI B;1 ? ' ><<G C1 . =<69 1 ' G E<;' D ' C 9AI B;' 9 C F B; 1<;= A @ ' = ;< ? C< ' 61 0 I<; . < ' F;<@1 ' D 'G; @1?A61 1<= ' ' 6AI1=C <PG< @1 B; 9 . < 'A ' 91;= ' =BGG ; <@ C1= = = < . A @ G1 . F ' BA61 ' 1 ' GA . < = 9 ;' A' F<; A1 ' 1 . @<F<1I<@ FAG1 A61= =N DB ' A9 <;

C< G<#F< C< . A@< B . <; B= 6 A =(A @ <PCAB= <@ F;<@1 N A @ 61< (EC< ' 9 ;F<@ ' A66 E C< < ; . B= @199<;] F< EC1FC <P1= <@ D< E<< ' C< <PG< @1 B;< A @ ;<F<1G =(C< 1 =1 BA <@ CA ' C< 9AB6 ' EA= @B< ' C< G; F<<@1 ?= 9 C1= G;<@<F<== 13(<F><;' C< 6A <;' GBD61=C<@ A ' < <;?< 1F ;<G6 ' ' C<=< 1 @1;<F ' A AF>=N A @ A6 < AI< ?<@ C1 . =<69 D 'CAI1 ?C1 .' <P16<@ ' C< '1 ' IA= ' 6 ?<;' G ==1D6< ' D A1 '6 A =(1 ' IA= <F<==A; ' 'CAI<;<F B;=< '3) 7 AP<=&(A @ C<=< C< +A;61A . < '8 ;<9B=<@ ';<?1= <;' G ' C1= A6 <('< 9 ;F<1 =BD ' =<.D6 ' 9 . 1==1 (F I ><@ A ' ==< . D6 ' 9 AD6<= a 2 2b(C G1 ? AD6<=(12 2' CA (A= 1 ' I B6@ D< =<6<F <@ 9; .' C< C1?C<;' F6A==<= D ' C< O I<; 0 . < (9; .' IC .' 1 ' E B6@ C 6@ 1 = G E<;=(1 ' E B6@ D< . ;< @ F16< '$ CA ' C< +A;61A . < = A @ 61< A <= O< <;A6 ' < 6A1@ D<9 ;< C1= ==< . D6 'A G; G =1 1 ' '1 F;<A=< C< @B 'BG ' = A . G=(A @ ' F I<; ' CA ' 9 C< 1 ? 1] . <1 'A <;;1 ;1A6 AP(EC1FC =C B6@ D< 6<I1<@ <JBA66 ' BG 'A66 6A @<@ G; G<; 'E1 C B '<PF<G 1 ?<I< ' CA ' 9 61< F6<;? ' C< 1 1= <;'A6= ' =BD . 1 <@ ' C< AD6<= A G6A 'A6;<A@ 'G;<=< <@ ' C< . ' D (A @ EC1FC < @<@ ' ;<A61M< A ?;A @ 1@<A 9(W W6 ' A @ B;? ' FF ;@1 ? ' C1= G6A (C; B?C B ' C< EC 6< >1 ?@ . (I1 C k1< <PF<G0 1 ' 9 = . < A F1< ' 'R / !' G; I1 F1A6 A==< . D61<= E<;< ' D< F 0 I ><@(F =1= 1 ? 9 . < . D<;= <6<F <@ 9; .' A . ?= ' C< 61;<< ;@<;=(EC =< GA; 1FB6A;' @B '1 ' IA= ' =BG<;1 < @ APA 1 (A @ ' @1=F I<;' A @ <PG;<== C< I1=C<= 9 C<1;' =<I<;A6 G; I1 F<= ' A6 < F B6@ ' F F<A6 9; .' C< AD6<= C< 9AF ' CA ' C< 6 A = CA@ A . B <@ I1 611 ' A 9< I <A;= ' A ' < ; . B= =B . (A @ CA (C<;< EA= A @<91F1 ' 9 A CB @;<@ A @ 919 << ' . 1661 = 1 ' C< ;<I< B<' C> = A; 61 ? ;<I<6A 1 ' <PF1 <@ A ?< <;A6 DB;= ' 9 1 @1? A 1 (A @ A6 <;<=1? <@

< EA= =BFF<<@<@ D ' . W 1< @< (;1< <(;FCD1=C G 9 < =(EC ' A@ G <@ . = ' 9 C< .<A=B;<= G; G =<@ D ' A6 < ' C< g9

AD6<= ' C1= ==< . D6 ' ;<K<F <@ C< <@1F = ;<=G<F 1 ? C<

= A . G @B 'A @ C< 6A @ AP(EC1FC G>A 'D< GA1@ D 'A66 C< ;@<;A 1 0 @1=F;1 . 1 A <6 'N A @ =<GA;A <@ A9 <;' M> 7$+ 'AGG; I<@ C< F;<A 1 ' 9 G; # I1 F1A6 A==< . D61<= ' <= AD61=C1 ? C< 6A <;(C< - 1 ? AD 61=C<@ C< = = < .' 9 9 ;F<@ 6AD B;' 9 ;' C< ; A@=' C< G; I1 F1A6 A==< . D61<=(<6<F <@ D '@1< C;<< ;@<;=(DB ' F A1 1 ?A @ BD6< B . D<;' 9 ;<G;<=< A 1I<= 9 C< C1;@ = A <(@<I <@ C<1;' A < 1 ' ' C< ;<9 ; .' 9 C< AP<=(GBD61F E ;>=(A @ C< 1 . G; I< . < ' 9 A?;1FB6 B;<' C< ' FA; ;1<@ ' 1S1<19 9B @ 1 A =BFF<==9B66 ' 9; .' 2 2 ' 2!"(EC< ' C< <E @1I1=1 ' 9

C< ' C< -1 ?'CA@' @<GA; <@&' C< A?1 A 1 ' 9' C< ' ==< . D6 'D<FA . <
<P ;< . <' A6<=C<;D<=' A @' C< %B>< 9' 1I<; 1=' 1 'IA1 'A < . G <@' '
;<= ;< FA6 . &' A @' C< =1 1 ?'EA=' <; . 1 A <@' D ' A' @<F1=1 ' CA ' C< +A;0
61A . < 'E B6@' A>< 'GA; '1 ' C<166#A6' ;<?1= ;A 1 ' 9' C< <@1F =' ;<6A 1I<
' C<6 A =' C< -1 ?' ;@<;<@' CA ' C1=' @<F1=1 ' =C B6@' D< <;A=<@'9; .'
C< ;<?1= <;=' N C< %B>< 9' ;6<A =' EA=' <P16<@' ' < 9' C1=' <= A <=' N C<
DDW' ADA 1<;' A @' ;W <AB'E<;< A;;<= <@' A @'6 @?<@'1 ' C< A <G;1= ='
C< +A;61A . < 'G; <= <@'A?A1 = ' C< ' '- -# !' A @' @< . A @<@' C<
;<FA6' 9' 1 =' . < . D<;=&' A @' C< +;1 F<' C1=' G; <= ' EA=' ;<K<F <@' D ' C<
-1 ?&' A @' ;<1 <;A <@' D ' C< +A;61A . < &' EC1FC' EA=' =BGG ; <@' D ' GBD61F'
H G1 1 'A @' C<EC 6< 9' C< ;< FC' . A?1= ;AF '1 '1 =' 1 . G;B@< '= ;B??6<
E1 C' C< 0 I<; . <
(;1'< <G<;F<1I<@' CA '1 'EA=' 6 'G ==1D6< ' I<;F . < C< ;<=1= A F<
9' C< +A;61A . < ' D ' =BGG;<==1 ?' 1 N' A @' 1 ' F KB F 1 ' E C' ' @<
A . 1? &' C< <E' -<<G<;' 9' C< <A6=&' C<G<;=BA@<@' C< -1 ?' 'A?;<<
'A'G6A 'EC1FC' @<= ; <@' C<G 61 1FA6' AB C ;1 ' 9' C< . A?1= ;AF ' C<
. = 'G; 9 B @' =<F;<F ' EA=' <F<==A; ' '=<FB;< C< =BFF<==' 9' C1=' G6A 'N
DB '1 ' M<@' B 'D<9 ;< 1 'EA=' ;1G<' < 9' C< . = '< <;?< 1F' . < . D<;='
9' C< GA;61A . < A; ' GG =1 1 &' D ' . <A =' 9' A' 6AI1=C' <PG< @1 B;<&' D0
A1 <@' G; 9=' 9' C< 1 1= <;1A6' G; K<F &' A @'1 . . <@1A <6 ' F . . B 1FA <@'1 '
' C< CA . D<;' 'AGG<A;<@' CA &' 1 ' AFF ;@A F< E1 C' C1=' G6A &' <@1F ='
E<;< 'D< 1==B<@' F;<A 1 ?'A ' ==< . D6 ' F . G =<@' 9' C< G;1 F<=&' G<<;=&'
A @' . A;=CA6=' 9' ;A F<&' A @' 9'A' F<; A1 ' B . D<;' 9'@1= 1 ?B1=C<@' G<;= =&'
FC =< '9; .' A . ?=' C< F6<;? &' C< D161 &' A @' C< . A?1= ;AF &' EC1FC'
EA=' 'D< < @ E<@'E1 C' A66' C< AB C ;1 ' < K <@' D ' C< G6< A; ' F . ='
1 ' C< 1 . < 9' CA;6< . A? <' C1=' B; ' EA=' ' ;<?B6A < C< ?< <;A6'
G 61F< 6AE=&' A @' C< <@1F =&' EC1FC' E<;< '6 ?<;' ' D< =BD . 1 <@' ' C<
+A;61A . < =&' C<KB@1F1A6' 9B F 1 =' 9'EC1FC' E<;< C< F<9 ; C' 'D< 61 . 1 <@'
C< +A;61A . < ' 9'+A;1=' E B6@' CB=' D< @<G;1I<@' 9' 1 =' 1 6< 9'A' B; ' 9'
+<<;=&' AG@'9 B;' I<;<1? ' B F16=&' A . <@' ?;A @' DA1661A?<=&' E<;< 'D<
<= AD61=C<@'E1r { ' C< @1= ;1F 'B @<;'1 =' AB C ;1 &' A @' 'F 91 <1 =' KB;1=0
@1F 1 ' E C1 ' I<; ' A;; E' 61 . 1 =' C< . A?1= ;A <=' C<A;@' 9' C1=' C;<A 0
< 1 ?' G; K<F ' E1 C' C< ?;<A <=' 1 @1? A 1 N' 1 I ><@' C< 9B @A . < @
A6 C B?C' B E;1 < '6AE=' 9' C< >1 ?@ . &' @< . A @<@' C< ;<?B6A;' F I FA0
1 ' 9' C< A <= 0< <;A6&' G; <= <@'A?A1 = 'A;D1 ;A; '1 . G;1= . < =&' A @'
@<F;<<@' C<1;' #I '1 I1 6AD161 ' (;1< <'1 . . <@1A <6 ' D A1 <@' 9; .' C<
-1 ?'A ' ;@<;'9 ;' C< A;;<=' 9' E ' 9' @1<' . A?1= ;A <=' EC ' E<;< . =

! ' >' ' - ! >8 ' : 4' '8* '

G; .1 < '1 ' C<1;' GG =1 1 %B I A6 @3 G;W . <= 16 A @ =AD<; ' ' C 7 C B?B= ' C FAG A1 ' 9 C ?BA;@= AGG<A;<@ D<9 ;< C +A;61A . < A @ @< . A @<@ C @<61 I <;' 9 C<=< E ' ?< 6< . < ' 1 ' C A . 9 C -1 ?' ['T 'A';< A66 9 B= =AD<; 'A @ @3 G;W . <= 16 %;<G61<@ C 1 0 @1? A ' . A?1= ;A <=' (B ' C< %1 ' ;@<;' 'G;<I< ' C<1;' F 66<A?B<= 9; .' D<1 ?' F . G; . 1=<@ C E ' B F166 ;= 1 ' JB<= 1 'A; =<A @ = . ;< @<;<@ C< . =<6 I <= A @ E<;<F I< <@ C < ' +1<;;< < 1=< <A;' =A @ C C<;' ' C< 1=6<= <' A;?B<;1 <' C 9AF ' 9 C<1;' A;;<= ' EA= = ;1 =G;<A@ AD; A@ A @ <PF1 <@ A 'B 1I <;=A6 1 @1? A 1 'N C G GB6AF< F; E@1 ?' ' C G6AF< 9 =1 1 ?' A @ I<#C<6 . 1 ?' C . A?1= ;A <= E1 C AFF6A . A 1 =' ' C C A C E<I<;' C <@1F = 1 ' JB<= 1 ' E<;< ;<?1= <;<@ A @ A' F B; 'G ==<==<@ 9G6< A; 'G E<;= EA= <= AD61=C<@' (B ' 61< <PF1 < . < ' 9 GBD61F G1 1 ' F #B<@' '1 F;<A=< C CT <6<' G; <= <@ A @ C G GB6AF< EA= 1 'A = A < 9 F . . 1 ' 'EA= @<F6A;<@ CA 'A66 C . < . 0 D<;= 9 C <E' F B; 'E<;< F <F <@ E1 C C B; A @ CA ' 'D<= E' BG '1 ' C ;1?C ' 9 ;#1= ;A 1 'EA= <JB1 I A6< ' ' G6AF1 ?' C GBD61F 9 ;0 B <= = 6<6 'A ' C . <;F ' 9 C 1 1= <;=

C G; I1 F<= 9 (;1 A (<A . A @ %ABGC1 ' @1= 1 ?B1=C<@ C< . 0 =<6 I <= A . ?= 'A66 D ' C < <;? ' 9 C<1;' ;<=1= A F<' C +A;61A . < ' 9 < <= G; <= <@ A @ EA= C;<A < <@ E1 C A' 9 ;F<@ @1== 6B 1 ' ' F; E@ 9 ?< 6< . < 9 66 E<@ D ' C G GB6AF< CA= < <@ '1 = @<9< F< A @ . = ' 9 C D6< . < ';<=1@1 ?' A ' (< <= =1? <@ A' @<@A9A 1 ' 1 ' C<=< <; . =), ['T !' . < . D<;= 9 C D161 ' 9 (;1 A @< B F< A= 1 9A . B= A ' C =< EC '=C B6@ AFF<G ' 9 A 'G6AF< B @<;' A ' <E' 9 ; .' 9 KB@1F1A6 A@ . 1 1= ;A 1 ' ;' <E' 9 ; .' 9 ? I<; . < 'EC1FC =C B6@ 'D< 1 ' AFF ;@A F< QE1 C C< 6AE= A @ C< G; I1 F1A6 F = 1 B 1 = ' @< P . F1A 1 ' 9 C< 1 1= <;= EA= A6= '@;AE ' BG A @ C< @<GB 1<= EC 'E<;< FCA;?<@ E1 C 1 = G;<=< A 1 ' ' C< -1 ?' E<;< C; E ' 1 ' C< (A= 16<' 1I16 EA;' E' AGG<A;<@ 1 . . 1 < ' 1 ' (;1 A A @ C< @1= B;DA F<= 1 ' (<A . 'E<;< '6<== =<;1 B= ' C< B 0 A1 <<;= @<=F< @<@ A; . <@ 1 ' C< E ' 9 +AB 9 ;F<@ C< ?A <= 9 C< +A6AF< 9 SB= 1F<% EC1FC CA@ D<< ' F6 =<@ D ' C< -1 ?3= ;@<;=% A @ <;;191<@ D ' C<1;' C;<A < 1 ?' F;1<= C< ? I<; ;' C1 . =<69 < ;<A <@ C< +A;61A . < ' 'A==< . D6<' C< D161 'A @ C< . A?1= ;AF ' . A@< I<C< . < ' G; <= =' ' %ABGC1 ' C< @1= ;@<;= E<;< <I< '?;<A <;' C< +A;61A . < ' ;<=1= <@ C< <E'<@1F =A @ C< %B>< 9 6<; . <;;<% C<? I<; ;' 9 C< G; I1 F<% <P16<@ C< . A?1= ;A <= D ' C< AB C ;1 ' 9 ' '- -#

3N + N % + ' : < H %% '

EC1FC' CA@' D<< ' G;<I1 B=6 ' G6AF<@' 1 ' C1=' CA @=' ' 9B;1 B=' . D' 9166<@' C<' = ;<< =' 9' 0;< D6<f' @< A1 <@' C<' <P16<@' . A?1= ;A <=f' ;B=C<@' ' C<' ? 0 I<; ;3=' C B=<' A ' C<' = B @' 9' C<' F=1 f' A @' C 6@1 ?' A ' AP<' I<;' C1=' C<A@f' 9 ;F<@' C1 . ' ' F I >< C<' +A1'61A . < ' '?;<A ' . D<;' 9' . < . D<;=' 9' C<' D161 f' C<' 6<;? f' A @' C<' C1;@' = A <' 91P<@' C<' = 'SB6 '9 ;' C<' . << 1 ?' 9' C<' / ' - ' 9' %ABGC1 ' A;=CA6' @<' ABPf' C<' ? I<; ;' 9' C<' G; I1 F<f' A6 C B?C' C<' CA@' E< ' C B=A @' . < ' B @<;' C1=' F . . A @f' @1@' ' I< 1B;<' ' GG =<' C<' G GB6A;' E166f' A @' C<' A <=' A==< . D6<@' A ' C<' CT <AB'@<' 1M166<f' C<' A F1< ';<=1@< F<' 9' C<'%ABGC1 =' C<;<' C<' C;<<' ;@<;=' ; . A 1 . B=6 '@< B F<@' A66'EC ' =C B6@' A1@' 1 ' C<' <P<FB 1 ' 9' C<' <E' <@1F =' N @< <; . 1 <@' CA ' 61<' AP' =BD= 1 B <@' 9 ;' C<' f- / ' =C B6@' D<' GA1@' 1 '%KABGC1 ' D ' C<' C;<<' ;@<;=' 1 @1=F;1 . 1 A <6 f' A @' ?A I<' A' @ BD6<' ;<G;<=< A 1 ' ' C<' C1;@' = A <' (<9 ;<' =<GA;A 1 ?f' C< ' < ;<A <@' C<' - 1 ?' ' E1 C@;AE' C1=' <@1F =f' ' AD 61=C' C<' ' ' - -# !' A @' ' F I >< C<' A <= 0< <;A6 ' 66' C<' G; I1 F<=' E<;<' 1 ' A' = A <' 9' A?1 A 1 f' A @' A6 . =' <I<; EC<;<' C<' G;1I16<?<@' F6A==<=f' 9 ;' C<' =A><' 9' G;<=<;I1 ?' C<1;' E ' G;1I16<?<=f' ?A I<' ' C<' . A== =' 9' C<' G< G6<' A' @A ?<; B=' <PA . G6<' 9' ;<=1= A F<' A @' 1 =B;;<F 1 ' ' EA=' 1 ' C1=' EA ' CA ' C; B?C' C<' AFFB . B6A <@' 9AB6 =' 9' C<' 0 I<; . < ' C<' A 1 'D<FA . <' 9A . 161A;1M<@' E1 C' 1 JB1;1 ?' 1 ' A @' ;<=1= 1 ?' C<' AF =' 9' C<' 0 I<; . < f' A @' D<FA . <' G;AF 1=<@f' A=' 1 ' E<;<f' 1 ' F1I16' EA;' (;1< <f' '> E1 ?' ECA ' . <A=1 . <=' ' A@ G f' F I ><@' A ' A==< . D6 ' 9' C<' F6<13? f' A @' A=><@' 9' 1 ' A' G<FB 1A; ' A==1= A F<f' EC1FC' EA=' ;<9B=<@f' E1 C' A' e gg 9 C<' = ; ?6 E ;@<@' @<F6A;A 1 ' A?A1 =' C<' G6< A; ' F B; ' FY< ? 'E==' C< f' G<;F<1I1 ?' CA ' C<' @<91F1 ' 1 ' C<' ;<A=B; '1 F;<A=<@' @A ' D ' @A f' A @' CA ' C<;<' E<;<' ' . <A =' 9';<G6< 1=6B ?' 1 f' C<' < @<AI B;<@' '=<@11F<' C<' A 1 ' D ' G; . 1=<=f' A @' ' AFJB1;<' A' ;1?C ' ' 61<1;' ?;A 1 B@<' D ' 1==B1 ?' A'@<F;<<' a C' B?B= f' 2 &b' @1;<F 1 ?' C<' A==< . D6 ' 9' 61<' A <= ' 0< <;A6' ' C<' =' A f' 2 !f' A @' =B=G< @1 ?' B 16' C< ' C<' AF 1 ' 9' C<' G6< A; ' F B;

(;1< <' D A1 <@' ' A@IA A?<' 9 ;' C1 . =<69' D ' C1=' @<F;<<N' 9 ;f' A=' 1=' A6 . ='A6EA =' C<' FA=<' EC< ' C<' 0 I<; . < f' 1 = <A@' 9' =<1M1 ?' C<' G0 G ; B <' . . < '9 ;' ;<9 ; .' A @' G GB6A;' . <A=B;<=f' 6 ' F =< =' ' C< .' 1 ' A ' 1 F . G6< <' . A <;f' B @<;' <P ;< . <' G;<==B;<f' C1=' F F<==1 =' E<;<' m<F<1I<@' E1 C B ' CA >=f' A @' 6 '1 F;<A=<@' C<' @< <; . 1 A 1 ' E1 C' _EC1FC' ICA ' C<' ;<9B=<@' EA=' @< . A @<@' C<' 1 1= <;f' '= ;< ? C< ' C1=' G =1 1 ' E' F @<=F< @<@' ' C<' 6 E<=' <PG<@1< =' <' =<1M<@' C<' 9B @=' 9' C<

8 ' ! /' 8 > ' : !>' $ ' 8 * -' $

!' A @' C<' . < ' G; @BF<@' D ' A' FCA;1 AD6<' 6 <; ' =< ' ' 9 '
9 ;' C<' D< <91 ' 9' C<' =B99<;<;=' D ' A' <;;1D6<' = ; . &'1==B<@' GAG<;' . < '9 ;'
C<' A <' GA . < =&' A @' IA1 6 ' < @<AI B;<@' ' F F<A6' A' DA >;BG F ' D '
C1=' @1=A= ; B=' . <A=B;<' (;1< <' EA=' ;<= 6I<@&' A ' A &G;1F<&' ';< . A1 '
1 ' G E<;'ℕ C<' GBD61F' DB;@< =&' 19'= ' ?;<A 6 '1 F;<A=<@' D 'C1=' EA ' 9'=>166&'
CA@' ' A=' < ' @<= ; <@' C1=' F;<@1 'ℕ DB ' A' B; ' 1 ;1?B<' I<; C;<E' C1 . '
S<A6 B=' 9' C1=' 1 96B< F<' I1 C' C<' LB<< #' A@A . <' @<' + 61? AF' @<F6A;<@'
C<;=<69' C1=' < < . &' A @' C<' B ' @3 ; 1=&' C<' - 1 ?3=' =<F @' D; C<;&' @<0

7>$#' B3' 7$@++@' @1= . 1==A6 ' (;1< <' ;<=1? <@&' A ' C<' =A . <' 1 . <

#ddf A@I1=1 ?' B1=' : ' ' ;<FA6' <F><;&' A=' C<' 6 ' . A
FAGAD6<' 9' ;<= ;1 ?' C<' 91 A F<=' ' A' =A 1=9AF ; ' = A <' 1=' ;< 1;< . < '
EA=' ;<F<1I<@' D & C<' GBD61F' h I1 C' < CB=1A= 1F' @<61?C ℕ' DB ' EC< ' 1 ' EA='
> E ' CA ' 1 ' CA@' D<< ' AFF . GA 1<@&' ' C<' GA; ' 9' C<' ; E &' E1 C' C<'
@< . A @' 9 ;' A' FA;@1 A63=' CA ' 9 ;' C1 . &' A @' CA ' C<' CA@' 6<9 ' C<' B;#' I<;0
EC<6 . <@' E1 C' 9AI B;=&' ' F;<@1 ' EA=' ?1I< ' ' C<' 9<<D6<' A;FC' 9 ;' C<'
=AF;191F<' C<' CA@' . A@<&' A @' GBD61F' G1 1 ' EA=' 6 '1;;1 A <@' D ' C<' C B;='
EC1FC' CA@' D<<9 ' ?;A <@' ' A' . A ' EC ' EA=' C<' DK<F ' 9' A6 . = ' B 1I<;=A6
;<G; DA 1 ' B1=' : &' 1 ' AFF ;@A F<' E1 C' (;1< <3=

A@?B+C') $+$A<7K' A@I,1F<&' ;<FA66<@' <F><;'ℕ C<' +A;61A . < =' ;<=B . <@' C<' <P '
B3 @?Q@7',5 (<;F1=<' 9' C<1;' 9B F 1 =&' A @' C<' <@1F =' E<;<' A B66<@'

C< ' 1 9 ; . <@' 9' C<=<' . <A=B;<=' C<' G< G6<' D<FA . <' E16@' E1 C' K ' '
B . D<;' 9' B ?' G<;= =' DB; ' C<' FA;@1 A6' 1 ' <991? ' 1 ' C<' +6AF<'
%ABGC1 W&' =<1M<@' C<' + FB9&' A @' F . G<66<@' A66' C<' GA==<;= D ' ' D E'
D<9 ;<' C<' = A B<' 9' < ; ' ' C<' . B6 1 B@<' C< ' G; F<<@<@' ' C<'
C B=<' 9' C<' ;FCD1=C G3=' D; C<;&' E1 C' C<'1 < 1 ' 9' DB; 1 ?' 1 'ℕ A @'
CAI1 ?' D<< ' ;<GB6=<@' D ' C<' . 161 A; &' B; <@' C<1;' 9B; ' A?A1 =' C<'
FAG A1 ' 9' C<' EA FC&' A @' . A;FC<@' EA;@=' C1=' @E<661 ?' E1 C' C<'1 < 0
1 ' 9' G6B @<;1 ?' 1 ' A @' DB; 1 ?' 1 ' ' C<' ?; B @' ' @<=G<;A <' F 961F '
>' G6AF<'ℕ A @' 1 = <A@' 9' <PG;<==1 ?' 1 =<69' E1 C' =<I<;1 &' A=' 1 ' =C B6@'
CAI<' @ <&' A?A1 =' C<' G; . <;=' 9' C<=<' B ;A?<=&' C<' +A;61A . < ' GA==<@'
;<= 6B 1 =' F @<. A ; ' 9' C<' ; G=' EC1FC' CA@' ;<G;<==<@' C< .

<F><;&' CAI1 ?' ;<=B . <@' C<' @1;<F 1 ' 9' A99A1;=&' EA=' < AD6<@&' C; B?C'
C<' F 91@< F<' C<' < K <@' E1 C' FAG1 A61= =&' ' G; FB;<' =B991F1< ' 9B @=' 9 ;'
C<' G< 1 ?' 9' C<' A <= 0< <;A6' (B &' => 9B6' A=' C<' EA=' A=' A' 91 A F1<;&'
C1=' 1 1= <;' EA=' ' <JBA6&' A=' A' G 61 1F1A &' ' C<' A=>' 9' ?;AGG61 ?' E@ C'
C<' G<;16 B=' F1;FB . = A F<=' D ' EC1FC' ;A F<' EA=' E' =B;; B @<@' <'
@1@' '> E' C E' ' F I >< C<' @<6<?A <=' 9' C<' ;< FC' A 1 ' 1 ' A' EA

=B1 <@ť ' Cᵋ <P1= 1 ?ᵋ = A ᵋ 9ᵋ . A <;ᵋ A @ť 'GBD61Fᵋ G1 1 'Ñ <1 C<;ᵋ @1@ť Cᵋ > Eᵋ C Eᵋ 'F F<1IᵋA @ťA B Fᵋ Aᵋ G6A ' 9ᵋ1 @1=G< =AD6ᵋ A @ť=B9910 F1< ';<9 ; . =ᵋ ᵋ 6 ?ᵋ C<=1 A <@ť ' ?;A ' ' Cᵋ C1;@ť = A ᵋ Aᵋ@ BD6ᵋ ;<G;<=< A 1 , #CAᵋ1ᵋ 'ᵋ=A ťᵋ Aᵋ B . D<;ᵋ 9ᵋ @<GB 1<ᵋ <JBA6ᵋ ' C =ᵋ 9ᵋ Cᵋ E 'G;1I16<?<@ť ;@<;ᵋ ?< C<;ᵋÑ A @ť C1ᵋ IA=' JB<= 1 ťD<1 ?ᵋ1 . @< ' F1@<@ťD<FA . ᵋ1 'ᵋ<I<; 'G ; 1 ' 9ᵋ Cᵋ >1 ?@ .ᵋ Cᵋ =BDK<F ' 9ᵋ Cᵋ . =ᵋ I<C< . < ' @1=FB==1 =ᵋ Cᵋ . A==ᵋ 9ᵋ Cᵋ F1 1M< =ť EC ' CA@ť A>< ' DB ' Aᵋ=61?C '1 <;<=' 1 ' Cᵋ JBA;;<6ᵋ D< E<< ' Cᵋ . A?1= ;AF 'A @ť Cᵋ . ť B @<;= @ť ' C1ᵋ FFA=1 ' 61A ' Cᵋ . A <;ᵋ 1 ' @1=GB ᵋ ;<9<;;<@ť ' C<1;ᵋ E ' GA; 1FB6A;ᵋ 1 <;<= =ť A @ť A66ᵋ ;<9 ; . ᵋ E B6@ť Dᵋ . <;<6 ' 166B= ; '19ᵋ Cᵋ C1;@ť = A <ť 9ᵋ EC1FCᵋ C< ' E<;ᵋ Aᵋ G ; 1 ť @1@ť CAIᵋ Aᵋ B . D<;ᵋ 9ᵋ @<GB 1<ᵋ <JBA6ᵋ ' C =ᵋ 9ᵋ Cᵋ E ' 91;=' ;@<;=ᵋ C1ᵋ @<=1;ᵋ 9 B @ť A ' <FC '1 ' Cᵋ ;A >ᵋ 9ᵋ Cᵋ D6<==ᵋÑ A @ť CBᵋ Cᵋ JB<= 1 'D<FA . ᵋ ;A =0 9 ; . <@ť ' E1 C B ' G<;16ť 1 ' Aᵋ JB<= 1 ' 9ᵋ 91?B;<=' ' EAᵋ A=><@ť 1 ' <I<; '@1;<F 1 '19ᵋ E< 9 B;ᵋ . 1661 =ᵋ 9ᵋ ;< FC1 < ' . A@ᵋ <PA??<;A <@ť G;< < =1 ᵋ EC< ' C< ' @< . A @<@ť Aᵋ B . D<;ᵋ 9ᵋ ;<G;<=< A 1Iᵋ <JBA6ᵋ ' C =ᵋ 9ᵋ 9 B;ᵋ ;ᵋ 91Iᵋ CB @;<@ť C B=A @ť 9ᵋ C<1;ᵋ F . GA ;1 =' Cᵋ 1 . ' F<; A1 ' ' C1ᵋ =BDKᵋ F 'D<FA . ᵋ <I<; '@A ' . ;ᵋ @A ?<; B=' ' <PF1 <@ť 1 . 1I<;=A6ᵋ A?1 A 1 ť 1 96A . <@ť Cᵋ GA==1 =ᵋ 9ᵋ Cᵋ . 1@@6ᵋ F6A==<=ť A @ť < AD6<@ť C =ᵋ EC ' CA@ť Cᵋ ?;<A <=' 1 <;<=' 1 ' D A1 1 ?ᵋ Cᵋ @ BD6ᵋ ;<G;<=< A 1 ' 9ᵋ Cᵋ C1;@ť = A ᵋ ' D A1 ' Cᵋ ?;<A <=' 1 96B< Fᵋ I<;ᵋ GBD61Fᵋ G1 1

BFCᵋ EAᵋ Cᵋ = A ᵋ 9ᵋ C1 ?ᵋ1 ' ;A Fᵋ EC< ť ' Cᵋ 2 Cᵋ <G < . D<;ť 2 ť Cᵋ +A;61A . < ';<?1= <;<@ť Cᵋ <@1F ' EC1FCᵋ F I ><@ Cᵋ A <= 0< <;A6ᵋ (B ' Aᵋ = ' Aᵋ 1 ' CA@ť @ ᵋ = ť 1 ' FA1 9ᵋ Cᵋ AGG<A;<@ť <;;191<@ť A ' 1 =ᵋ E ' E ;>ť A @ť ';<F 16ᵋ D<9 ;ᵋ 5<Mᵋ @L<@ ; J@7 Aᵋ . <A=B;ᵋ EC1FCᵋ1 ' CA@ť1 =<69ᵋ< <;?< 1FA66 '@< . A @<@' =<< . <@ť ' =<ᵋ Cᵋ A F1< ' . A;FC ' <;1 ?ᵋ ' 1 =ᵋ 9 B @A 1 =ť A @ C B?C ' 1 =<69ᵋ FA66<@ť BG ' ' 6< @ť 1 ' 1 =ᵋ =BGG ; ' 1 Cᵋ C1ᵋ DK<F ' 1 @<F1@<@ť CA ' Cᵋ A W= 0< <;A6ᵋ =C B6@ť Dᵋ F I ><@ť AFF ;@1 ?ᵋ ' C< 9 ; . ' B=<@ť A ' Cᵋ 1 . ᵋ 9ᵋ C<1;ᵋ 91;=' ==< . D6 '1 ' * ' Cᵋ @<GB 1<= A ' CA ' G<;1 @ť E<;ᵋ <JBA6ᵋ 1 ' B . D<;ᵋ 9 ;ᵋ <AFCᵋ ;@<;ᵋÑ A @ť A=ᵋ C< '?AI< C<1;ᵋ I <=ť ' 1 @1I1@BA66 ť DB ' D ' ;@<;ť Cᵋ ;<=B6 ' 9ᵋ Cᵋ @1I1=1 = QEAᵋ <F<==A;16 ' A6EA =ᵋ 1 ' 9AI B;ᵋ 9ᵋ Cᵋ G;1I16<?<@ť F6A==<=' <F><;3= = = < . ' EAᵋ ' . A><ᵋ Cᵋ 6A <;ᵋ F ;1DB <ť 1 ' G; G ; 1 ' ' C<1;ᵋ 9 ; B <=ť ' Cᵋ <PG< =<ᵋ C9ᵋ Cᵋ A <Nᵋ A @ť ' G; FB;ᵋ Cᵋ A@ G 1 ' 9ᵋ C1= = = < . ť 1 ' EAᵋ <F<==A; ' CA ' Cᵋ @<GB 1<ᵋ 9ᵋ Cᵋ C1;@ť = A ᵋ =C B6@

, 8 ! 0 0 ! / ! : !>

D< @ BD6< 1 B . D<; C =< 9 C< ;<G;<=< A 1I<= 9 C< E C<; ;@<;=(A @ CA C< I <= =C B6@ D< A>< 1 @1I1@BA66 C< GBD61F CA@ @<F6A;<@ A6 . = B 1I<;=A66 1 9AI B; 9 C1= G1 1 N A @ C< F6AB=< A@@<@ D C< +A;61A . < C< <@1F 9 C< 2 C <G < . D<; @<G;1I<@ 1 A F< 9 A6 . = A66 1 = G GB6A;1 C< +A;61A . < E(1 EA= =A1@(<? 1= 1FA66 ;<=1= <@ C< E1=C<= 9 C< G< G6<(A9 <; CAI1 ? A 91;= ;<=1= <@ C< B; 6 9 ; C< GB;G =< 9 D A1 1 ? G E<;(;< ;< A1 1 ? CA EC1FC 1 CA@ B=B;G<@ EA= = @<=<; <@ D C< 6AE <;= EC CA@ D<< 1 = =BFF<==(A @ CA@ AFC1<I<@ 1 = =BFF<==<=

C< D6<==< 1 =<69 D<FA . < @1I1@<@ 1 E GA; 1<=(9 EC1FC < < <;?< 1FA66 =BGG ; <@ C< FAB=< 9 C< C1;@ = A <' C< 6A <;(EC1FC B . D<;<@ 1 1 = ;A >= C< %B>< 9 ;6<A = A @ . = 9 C< ?< 6< . < EC CA@ 9 B?C 111 . <;1FA(9 ; . <@ 1 A66 C< G;1 F1GA6 E = A== F1A 1 = 9 ; C< GB;G =< 9 =<FB;1 ? C< ;1B . GC 9 C1= FA11=9<N A 1 . . < =< B . D<; 9 1 F< @1A; GA . GC6< = E<;< F1;F1@A <@ 1 C< G; 0 I1 F<=N GA1@ D;1?A @= I<; ;A C< G; I1 F<=N @1= ;@<;6 . D= E<;< ?B16 9 C< ?;<A <= <PF<==<= 1 +A;1=N A @ = . < . C= 6A <; 9166<@ C< FAG1 A6 E1 C <;; ; D C< DB; 1 ? A @ G166A?1 ? C< WI<166 . A B9AF ; C16= C< =<F;< 6<A@<;= 9 A I1 6< A @ @< . F;A 1F 9AF 1 < @<AI B;<@ A; B=< C< G GB6AF<(A @ =BD@B< C< B; D . <A = 9 C;<A =(C< D B;?< 1=1< A @ A 6A;?< #G ; 1 9 C< 1 . ? D161 =<1M<@ <I<; GG ; B 1 9 AGG6AB@1 ? C< . = G G 16A; . AP1 . = A E;1 <;=(9 66 E1 ? C< <PA . G6< 9 @ ;F< (G; G =<@ 1 C<1; E ;>= A = A < 9 = F1A6 ;@<; DA=<@ A <JBA61 9 ;1?C = A @ 61D<; . B6 1 B@< 9 GA . GC6< =(A @ A . ?= C< . A F<6<0 D;A <@ < D DDW 1] <=(< 1 6<@ [CA 1= C< C1;@ = A < c A@@<@ <F @ B< . DN ?< <; A6 <PF1 W . < C< . . < 9 C< F;1=1= @;<E B A .8++ MM ! MM SK< - 1 ? F I ><@ C< <F @ ==< . D6 9 C< AD6<=(EC1FC EA= =BD . 1 <@ C< JB<= 1 A= C E C< A <= 0< <;A6 =C B6@ D< F I ><@ F . . < F<@ 1 = =1 1 ?= C< ! C I< . D<;(2 (A @(A= CA@ D<< C< FA=< E1 C(C< G;<F<@1 ? <(@1I1@<@ 1 =<69 1 =1P F . . 1 <<=(< 9 EC1FC A6 < , CA G;<=1@<@ I<; D =1<1B C< - 1 ?= D; C<; , @<F6A;<@ 1 9AI B; 9 C< @ BD6< ;<G;<=< A 1 9 C< C1;@ = A < <F><; @1@ 9 66 E C< A@I1F< 9 C< AD6<= < C G<@(D <PF1 1 ? A = ;B??6< D< E<< C< G;10 I16<?<@ F6A==<= A @ C< C1;@ = A <(;< . A1 . A= <; 9 C< G =1 1 N A @ C< =BD . 1 <@ A ;<G ; C< I<;<1? 1 AFF ;@A F< E1 C EC1FC

C<;< AGG<A;<@ ' C< 2 C %<F< . D<; 2 A' A6 @<F6A;A 1 < 1 6<@ C< W=B6 A ' @< =<16 1 ' EC1FC C< 6 ? I<P<@ JB<= 1 ' EA= DB ' GA; 6 ' = 6I<@ ' B1= : ' @<F1@<@ CA ' C< @<GB 1<= 9 C< C1;@ = A < =C B6@ D< <JBA6 1 ' . B D<;' ' C =< 9 C< C<;' E ' ;@<;= ?< C<; DB ' 6<9 ' C< JB<= 1 ' 9 C< ?< <;A6 . < C @ 9 @<61D<;A 1 ' 1 ' AD< A F<' C1='@<F6A;A 1 ' EA= ;<F<1I<@ E1 C 9A I B;A6 C B?C 1 ' 6<9 ' C< JB<= 1 ' 9 C< ?;<A <= ' 1 . G ; A F< B @<F1@<@ ' C< C1;@ = A < E G<;F<1I<@ 1 =' = G ? CN 1 ';<F> <@ E1 C ? @ ;<A= ' ' C< =BGG ;' 9 A' G ; 1 ' 9 C< D6<==< A @ C< 6<;? A @ 9 ;<=AE CA '1 ' E B6@ D< AD6< ' F ; 6 C< . < C @ 9 @<61D<;A 1 ' ; .' C1= . . < ' C< <I 6B 1 ' EA= 1 <I1 AD6<

C< GC16 = GC<;= 9 C< A?< CA@ A' ?;<A ' =CA;< 1 ' D;1 ?1 ?' AD B ' C1= ;<=B6)' C< . = ' 9A . B= 9 C< . 6 A1;< S<A ' SAFJB<=

B==<AB %1@<; %3 6< . D<; E<;< ' . ;< DB ' C<1; =FC 6 = 166 96 B;1=C<@ ' '<96 <F <@ C< =BGG;<==1 ' 9 ADB=<= ABC ?3B+B

'A @ G;1I16<?<= DB ' A ' C< =A . < 1 . < @<= ; <@ 1 @1=F;1 . 1 A <6 C< . = ';<=G<F AD6< 1 = 1 B 1 =' A= E<66 A= C =< EC1FC E<;< C< . = 'KB= 6 '@<F;1<@ ' C1=' G<;1 @ 61 <;A B;< EA= FB6 1I A <@ E1 C =BFF<== ' C< DDW (A; CW0 6< . 'GBD61=C<@ C1= 6<A; <@ ['S B; < ' 9 AFCA;=1=&`A @ (<; A;@1 '@< ' +1<;;< C1= FCA; . 1 ?' [' B@1<= 9 A B;< EC16= ' <D . BFC<; @;W _ CW 1<;' a 61< ' =FA;F<6 '> E b A @ %<6166< . A1 A1 <@ C< C B;' 9 C< ;< FC =FC 6 9 G < ; ' %BF1= = 6 . ;< ;< . A;>AD6< 9 ;' C1= D6< FCA;AF <;' CA '9 ;' C1= A6< =&' ;< @<;<@ C1 . =<69 9A . B= ' C< = A?<& E' < ;1FC<@ D ' C< E ;>= 9 6 A1;<& ' E1 FC A;1< S =<GC CW 1<;' EA= A6;<A@ '> E & A @ ' EC1FC (<AB . A;FCA1= CA@ ?1I< ' C1= [' A;1A?< @< 1?A; &`A' E ;>' EC1FC ?AI< A' G E<;9B6 A @ @A ?<; B= 1 . GB6=< ' C< ;<I 6B 1 A; ' < @< F ' 9 . < 3W . 1 @=' C< ?< 1B= 9 61< A; =& A9 <;' CAI1 ?' =6B . D<;<@ @B;1 ?' C< 6A= ' ;<1? & ;<AE >< B @<;' C< FC1=<6= 9 B@ 'A @ CAB@< & A @ C< 9 ;F1D6< G< F16= 9 1< & 9 %AI1@& A @ C1= I1? ; B= =FC 6' '?;<A <;' B . D<;' 9 @1= 1 ?B1=C<@ . < ' CA@ <I<;' AG0 G<A;<@ ' C< C<A ;1FA6 D A;@=& ' E611FC A6 . A' E' 91;= ' . A@< C1= AG0 G<A;A F<& A @ ' EC1FC T & 6<B; & 6W& A @ (;1MA;@ FA;;1<@ C< A; ' 9 @;A . A 1F @1F 1 ' ' 1 = C1?C<= 'G 1 ' C< ;A >= 9 =F1< 191F . < ' E<;< A@ ; <@ D ' . A ' 166B= ;1 B= A . <= N A @ 9 ;< . = ' A . ?= ' C< . ' AGG<A;' C =< 9 C< . A C< . A 1F1A = ?<& A?;A ?<& A @ AG6AF< N C< FC< . 1= = A I 1=1<;& B;F; & A JB<61 & (<; C 66< & A @ OB ' @< ;I<AB& C ' < @<;<@ C1 . =<69 < 9 C< D< <9AF ;= 9 C<" CB . A ' ;AF< D

! $A7D ! ' #A $77 ' : 4' ' 8* '

C1=' @1=F I<; ' 9' . < C @=' 9 ;' @1=1 9<F 1 ?' A1; N 9' C<' GC =1F1= ' B6 . D(EC ' 1 . . ; A61M<@' C1 . =<69' D ' C1=' ;<=<A;FC<=' 1 ' C<' JBA61 1<=' 9' C<' 6 A@= <N 9' C<' A B;A61= ' %ABD< (C<' 9<66 E 6AD B;<;' A @' =BFF<== ;' 9' (B99 N & 9' C<' 6<A; <@' @ F ;' 1FJ' @3 M ;N A @' 91 A66 (9' C<' A= ; . <;' %<6A . D;< , <' 9' C<' . < ' ' EC .' ;A F<' E<=' C<' A@ G 1 ' 9' C<' . < ;1FA6' = = < . , A @' 9' IA1 ' (A1 (C<' AB C ;' 9' C<' *' 1= ; ' 9' F1< 'A @' @<; ' = ; . ~' C<'GBD61F'A < 1 'EA=' A ;AF <@' 6' C1=' G<;1 @' D ' C<' I A?<=' A @' @1=F I<;1<=' 9' C<' B ' @<' C 1=<B6' 1 ' 0 ;<<F<(A=' E<66' A=' D ' C =<' 9' (B?A1 I166<' A @' C<' B 9 ;0 B A <' A' +<; B=<(A @' 1 @B6?<@' 1 ' @;<A . =' 9'1 . G ; A 'A@IA A?<=' 'D<' @<;1I<@' D ' C<' CB . A ' ;AF<' C; B?C' C<' C< ;1<=' 9' <= . <;' E1 C' ;<=G<F ' ' . A? < 1= . (A @' C<' 1 I< 1 ' 9' DA66 =' D ' ? 691<; ' 1 <;A; ' . < (6<A; <@' . < (A @' GC16 = GC<;=(E<;<' A@ . 1 <@' '1 1 . AF ' E1 C' . < ' 9' C<' C1?C<= ' D1; C(A @' C<' 6A <;' @1=G6A <@' A' ?;<A ' <A?<; <==' 9 ;' ?< <;A6' 1 9 ; . A 1 ' C<' . A <;=' 9' C<' BGG<;' A @' . ;<' < 61?C < <@' F6A==<=' CA@' <I<;' D<< ' . ;<' ;<91 <@' CA 'A ' C1=' G<;1 @(EC< ' ;< FC' G 61 < <==(F<6<D;A <@' C; B?C B ' 1B; G<(9 ; . <@' C<' ?;<A <= ' FCA; . ' 9' = F1A6' 619<(A @' CA@' AFJB1;<@' A' D6<' A @' ?;AF1 B=' G<;9<F 1 (9' EC1FC' C<' ;< . < . 0 D;A F<' 6 ' EA=' = ' ';< . A1 ' (B 'A' @<<G' ?B69' EA=' D<1 ?' G< <@' D ' C<' @<91F1 '1 ' C<' 91 A F<=' A @' C<' 9AB6 =' 9' C<' O I<; . < 'D< <A C' C<' 9<< ' 9' C1=' D;1661A ' = F1< ' C<;<' EA=' D<C1 @' 1 ' A' @1=F < <@' . 1@@6<' F6A==(EC =<' I 1F<' =FA;F<6 ' F F<A6<@' C<' =B66< ' . B; . B;=' 9' A ' 1? ;A ' A @' E;< FC<@' . B6 1 B@<' ; .' C<' 6A <;' JBA; <;' C<' = ; .' =G<<@16 ' DB;= '9 ; C' ' I<; C; E' A ' <@191F<' A6;<A@ ' . 1 <@' '1 =' 9 1 . @A 1 =(A @' EC1FC' @1=AGG<A;<@' D<9 ;<' C<' D;<A C' 9' C<' G GB6A;' 9B;

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* +ʻ C1= ; ʻ 9ʻ C< ;< FC' <I 6B 1 ʻ1=ʻ C< C1= ; ʻ 9ʻ ;A F<1 ʻA'= A < 9ʻ ;<I 6ʻA?A1 =ʻA' . A <;1A6' A @' ;A@1 1 A6' = = < . ‹ A @' < @<AI B;1 ?' ʻ <= AD61=C'1 ʻ' C< . 1@=ʻ 9ʻ ;B1 =ʻ A ʻ 1@<A6' A @' ;A 1 A6' ;@<;ʻ 9ʻ C1 ?=‹ A <E'F1I16' A @' G 61 1FA6' = = < .ʻ 9 B @<@' ʻ C< G;1 F1G6<=ʻ 9ʻ CB . A 1 ‹ 61D<; ‹ F . . ʻ;1?C ‹ A @' A B;A6'<JB1 Y

ʻ C<91;=ʻE<=<< C< = ;B??6< . A1 A1 <@'D ʻ C< C1;@' = A <9 ;ʻ CW' AD 61 1 ʻ 9ʻ 9<B@A6' =<;I1 B@<=ʻA @' C< G;1I16<?<=ʻ 9ʻ C< KI ʻ91;=ʻ ;@<;= , ʻ A ʻ1 . G =1 ?'A @' <;;1D6< = ;B??6<‹ C< DK<F ʻ 9ʻ EC1FC' EA=ʻ 9A;ʻ . ;< CA ʻ A A1 <@‹ A @'EC1FC' < @<@'1 ʻ C< ;1B . GC' 9ʻ C< . B6 1 B@<ʻA @' C<9A66' 9ʻ C< C; <ʻ C< =<F @'G;<=< =ʻ ʻ B=ʻ ;A F< B @<;ʻ C< =F B;?< 9ʻA' 9 ;<1? ʻEA;‹ A @' C< ;<1? ʻ 9ʻA' . D' C<A@<@'D ʻD6 @ C1;= ʻ6<A@<;=‹ ʻ EC1FC' =BFF<<@<@'A'I1 6< ʻA @' 1 FAGAD6< ? I<; . < ʻ ʻ1=ʻ C< G<;1 @' @B;1 ?'EC1FC' ;A F< EA=ʻA'G;< ʻ ʻ <;; ;ʻA @'A A;FC ʻN CA ʻ 9ʻ C< 0 I< 1 ʻA @' C<%1;<F ;A < BG' ʻ C< C' (;B . A . <ʻ CW' <I 6B 1 ‹ 1 ʻ1 =ʻ C1;@'= A?<‹ =C E=ʻB=ʻ C< A 1 ‹ <PCAB= <@'D ʻ= ʻ . A ʻ=B99<;1 ?=‹ E<A; ʻ 9ʻ = ʻ . A ʻ <PF<==<=‹ =<<>1 ?‹ A ʻ C< 9<< ʻ 9ʻ A' O ;<A ʻ AG A1 ‹ ;<9B?< 1 ʻA' . 161 A; ʻ@<=G 1= . ʻ ʻ=<< . <@' C< ʻ ʻ D< ;A =9 ; . <@' 1 ʻ < IA=ʻ FA . G‹ A @' @B;1 ?' E<6I< <A;=ʻ =1? A61M<@' 1 =ʻ ;<AF 1 ʻ A? . =ʻ B; G< D ʻA ʻB 1 <;;BG <@'=<;1<W 9ʻ ;1B . GC=ʻ C1=ʻ 1=ʻ C<G<;1 @' 9ʻ C< =B6A < A @' . G1;<ʻ 1 A66 ‹ EC< ʻ C< AGG61FA 1 ʻ 9ʻ = . < 9ʻ C< G;1 F1G6<=ʻ1 ʻ C< A . < 9ʻ EC1FC' C< <I 6B 1 ʻEA=ʻ <99<F <@'CA@';<F<1I<@' 9; .ʻ 1 . <A'=G<F1<=ʻ 9ʻ F =<F;A 1 ‹ EC< ʻ = ʻ . A ʻ . < ‹ A?1 A <@' D ʻ = ʻ S A ʻF <A; ʻ1@<A=‹ CA@'6<A; <@' ʻ61I< ?< C<;ʻ1 ʻG<AF< B @<;ʻ C< 1; ʻ CA @' 9ʻ C< F JB<; ;‹ CW' 6A <;ʻ 9<66'1 ʻC1=ʻ B; ‹ A @' C< (. D =ʻE<;< ;<= ;<@‹ ʻ C< F @1 1 ʻ 61A ʻ C< ʻE B6@' < @ E' ;A F< E1 C' G 61 1FA6' 61D<; ‹ A @';<=G<F ʻ C<1 <1'<= =ʻ1 C<;< ʻ ʻ C< <E' ;@<;ʻ 9ʻ C1 ?=ʻ C<;<

I' 7>+?@' L7@A@+<A' M@7A@#3'<B' BD7' G$@S' <M@7@3B7@' CD7$+ ' M>#3' A' ?@+<D7K' D+C@7' 9 B;' L7$+?$L>#' >+C' G@7K' C$G@7A@' LM>A@A

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* + A <= 0< <;A6 F . . < F<@ C<1;' =1 1 ?= ' C< 7 C A , 5 ' 1 ' C< CA66 9 C< < B= +6A1=1;= A ' <;=A166<= ' C< @<GB 1<= E<;< =B . . <@ ' C< A6 WA F< A @ 1 ; @BF<@ AF ' =H # <Y;# F ;@1 ?' ' C< 9 ; . ' <= AD61=C<@ 1 ' , , /]' DB ' C< 1 . < CA@ 6##A==<@ EC< ' C< C1;@ = A <&& =G<A>1 ?' ' 1 = > <<= A @ B F I<;<@ AF0 > E6<@?<@ 1 =CB . 161A 1 ?' 1 9<;1 ;1 ' 1 ' C< G;<=< F< 9 C< C<;' ;@<;=' ' CA= < <@ ' C< F ;A; ' A==<; ' 1 = <JBA61 A @ EC< 9 66 E1 ?' C< - 1 ?3= <PA . G6< C< E ' C<;' ;@<;= CA@ F I<;<@' C< @<GB 1<= 9 C< C1;@ F ;A; ' ' FB= . 1 . . <@1A <6 ' @1@ C< =A . < ' C1= AF 1 ' EA= A =B991F1< ' 1 @1FA 1 ' 9 C< FCA ?< EC1FC CA@ A>< ' G6AF< 1 ' GBD61F 9<<61 ?' A @ . A <;' C< @<GB 1<= 9 C< C1;@ = A < E B6@ CA I < ?A1 <@ DB ' 61 6< C E<I<;' D ' G; F6A1 . 1 ?' C<1;' <JBA61 ' E1 C C< C<;' ;@<;=' 19 C< ' CA@ ' <= AD61=C<@ 1 ' D ' 9AF = ' C< 91;= ' A @ . = ' 1 . G ; A ' JB<=0 1 ' ' D< @<F1@<@ EA=' EC< C<;' C< I <= =C B6@ D< ;<F<1 I<@ D ' ;@<;= ;' 1 @1 I1@BA66 ' (' C< A@ G 1 ' 9 C< 91;= ' . < C @ 61< @<GB 1<= 9 C< C1;@ = A < E B6@ CA I < 6 = ' C< A@ I1 . A?< 9 C<1;' B . D<;=' EC1FC E<;< @ BD6< C =< 9 <AFC 9 C< G;1 I 16<?<@ ;@<;=' C< B; 61< . AK ;1 ' 9 C< D161 A @ A ?;<A ' B . D<;' 9 61< F6<;? ' F =1@<;<@ 1 ' 9 C< C1?C<= ' 1 . G ; A F< CA ' <AFC ;@<;' =C B6@ I < =<GA;A <6 ' ' A66 G 61 1FA6 JB<= 1 = DB ' A . ?= ' C< D 1 ' C<;< E<;< A F<; A1 ' B . D<;

. . 1 <<' 9' 6<F ;=' =1 1 ?' A ' C<' V <6' @<' 166<' ;?A 1M<@' C<' A 1 A6' 0BA;@&' EC1FC' 1 ' ;A1=<@' ' C<' B . D<;' 9' 9 ; <1?C ' C B=A @' . < &' A @' ' EC1FC&' ' C<' G; G =A6' 9' A9A < <&' 1 ' ?A I<' C<' ;1F 6 ;<@' F F>A@< Y' ' AFC' @1= ;1F ' CA@' 1 =' DA A61 ' 19 ' C B=A @' G1><=' E<;<' . A B9AF B;<@&' A @' C<' A;=< A6' 9' C<' IA61@<=' EA=' G166A?<@ ' [' ' C<' (A= 16<' z , ' C<' (A= 16<' z' D<FA . <' C<' F; ' 9' C<' <PF1 <@' G GB6AF<' N A @' C<' =1<?<' 9' C<' (A= 16<' EA=' 1 . . <@1A <6 ' F . . < F<@ ' C<' ;< FC' 0BA;@=' ;<I 6 <@&' A1@<@' C<' . D' . C' FA &' A @' =<FB;<@' C<' FAG B;<' 9' C<' F1 A@<6&' C<' 9<<D6<' ?A; ;1= ' 9' EC1FC' =1B < @<;<@ ' C<' G< G6<&' ;A1=1 ?

>Q$+ B3<MB' >A<$#@' ,/;M 'D#K' ,5

1 ' C<1;' CA @=' C<' D6<<@1 ?' ; GC1<=' 9' C<1;' ;11B GC&' ;< B; <@' E1 ,C' 1 . , . < =' BG; A;' ' C<' V <6' @<' 166<&' A @' =G<<@16 ' =1? A61M<@' C<1;' I1F ; ' D ' . A ' A==A==1 A 1 =' C<' B 9 ; B A <' %<6AB A &' 0 I<; ;' 9' C<' (A= 16<&' C<' G;1= <;' 9' C<' . B6 1 B@<&' " ' =6A1 ' D ' C< . ' '6< <;' 9 B @' BG 'C1 . ' FAB=<@' 6<=6< <=&' C<' G; I =' 9' C<' . <;FCA =&' ' D<' AFFB=<@' 9' ;<A= &' A @&' A9 <;' CA I1 ?' D<< ' D; B?C ' BG' ' ;1A6' D<9 ;<' C<' . D&' C<' EA=' >166<@' D ' A' G1= 6 =C ' C<' <PF1 < . < ' EA=' E' A ' 1 =' C<1?C ' C<' ;<?B6A;6 F = 1 B <@' AB C 0 ;1 1<=' E<;<' <I<; EC<;<' 1 =B6 <@&' C<' 6AE' EA=' @<=G1=<@&' D6 @' 96 E<@' 1 ' A66' @1;<F 1 =&' A @' A' F1 I16' EA;' EA=' 1 . . 1 <

C<' B; ' 6 ';<?A;@<@' C<' 1 =B; ;<F 1 ' 1 '+A;1=' A=' A' ;1 ' C<' - 1 ?' G; G =<@' ' @1== 6I<' C<' ==< . D6 &' A @' ?A I<' ' A;=CA6' (; ?61<&' C<' F . 0 . A @<;' 9' C<' A; . &' 1 . 61 . 1 <@' G E<; ' 9 ; . <@' 1 ' C<' . 1@@6<' 9' C<' 1?C &' D ' C<' %B><' @<' 6A' - FC<9 FAB6@ 1A F B; &' 9' C<' <AG B;<' 9' C<' (A= 16<' A @' C<' C<;' <I< =' 9' C<' C' SB6 &' C<' - 1 ?' <PF6A1 . <@ , [' ' 1=' A' ;<I 6 `' [' '1=' A' <I 6B 1 &`' ;<G61<@' C<' %B><' ' C<' - 1 ?3=' ;<= 6B0 1 ' ?A I<' EA ' D<9 ;<' C<' =<;1 B=' A=G<F ' 9' A91A1;=&' A @' ' C<' 9 66 E1 ?' @A ' C<' G; F<<@<@' 1 'G<;= ' ' C<' ==< . D6 ' [' C<' =16< F<' 9' C<' G< G6<' 1=' A' 6<== ' ' C<' - 1 ?&` 1;AD<AB' CA@' =A1@&' A @' C<' @<GB 1<=' A ' 91;= ' ;<0 . A1 <@' G<;9<F 6 ' . B <' 1 ' C<' A;FC3=' G;<=< F<' N DB ' EC< ' C<' CA@' =A1@' CA ' C<' EA=' DB ' <' E1 C' C<' A 1 &' CA ' C<' ; G=' =C B6@' D<' E1 C@;AE &' A @' A@@<@' 1 ' A' 91; .' I 1F<&' [ ' 1=' ' B' CA ' ' 1 1=' . =<69&` 6 B@' AGG6AB=<=' D1B;= '9 ; C&' A @' C<' ==< . D6 ' ;1=1 ?&' ;<F @BF <@' C<' - 1 ?' ' C1=' GA6AF<

B1=' : &' G<;F<1I1 ?' C<' <F<==1 ' 9' AGG<A=1 ?' C<' FAG1 A6' C1 . =<69&' A1 . 1 . F<@' CA ' <F><1" =C B6@' D<' ;<FA66<@&' A @' CA ' C<' E B6@' G; F<<@'

4' M$A' ?B?Q>C@' D+$<@C' SM$<@ ' <M@' >+?$@+<' ?B#BD7' B3' <M@' ?$<K' B3' 7>+?@ ' S$<M' 7@C' >+C' J#D@ ' <M@' ?B#BD7' B3' <M@' ?$<K' B3' >7$A

C< 9 # I I1 ?' @A ' ' +A;1=& EC<;< (A166 ' CA@' D<< ' AGG 1 <@' . A ;& A @' A9A < < F . . A @<;' 9' C< 1I1F' 0BA;@' ' EA=' D ' C< . ' CA ' C< A;FC' EA=' ;<F<1I<@' *' 1;<&' =A1@' C< 91;= & A=' C< G;<=< <@' C1 . ' E1 C' C< >< =' 9' C< F1 & [' < ; ' + ' ;<F I<;<@' C1=' G< G6<N& C<;< C< G< G6< CAI<' ;<F I<;<@' C<1;' - 1 ? ' B1= < <;<@' C< V <6' @< 166<' B AFF . 0 GA 1<@' D ' ?BA;@=& ;<F<1I<@' C< ;1F 6 ;F@' F F>A@< A . 1@=' C< AFF6A . A0 1 =' 9' C< . B6 1 B@<& A @' @1@' ' ;< B; ' ' <;=A166<=' B 16 ' C< CA@' =A F 1 <@' C< AF =' 9' C< G< G6<' (B ' ' =A F 1 ' =BFC' AF =& A @' ' ;<F ? 1=<& A=' C< @1@& AB C ;1 1<=' <6<F <@' E1 C B ' A ' A6' EA;;A & EC =< AI E<@' 991F< 1 ' EA=' ' 61 . 1 ' C1=' E ' G E<;& EA=' 1 ' 1 =<69' ' AD@1FA <

@' E' F . . < F<@' C< 91;= ' < . 1?;A 1 ' C< B ' @3 ; 1=& C<

, - 1B2;W =<F @' D; C<;& C< +;1 F< 9' @W& C< +;1 F< 9' $7><' ; $ 7>

1& A @' C< + 61? AF' 9A . 16 '?AI<' C<'<PA . G6<'A @' JB1 <@'

+1 A F<' C< ;< B; ' 9' <F><;' ' +A;1=' EA=' A' ;1B . GC' 9 ;' C1 . & DB ' 1 ' A=' A6= ' C< 6A= ' @A ' 9' C1=' G; =G<;1 ' <' D<61<I<@' C1 . =<69' ' D<' C< ;B6<;' 9' A' GA; ' EC1FC' 6 ' 6 ><@' BG ' C1 . ' A=' A ' 1 = ;B . < & A @' < @<AI B;<@' ' =AI<' (<M< IA6& C<' =<F @' 1 ' F . . A @' 9' C< ; G=& A @' A' G;1= <;' 1 ' C< CA @=' 9' C< G< G6<' C< < @A ' B6 ' A @' C1=' <GC<E' (<; C1<;' CA@' A6;<A@ ' G<1 1=C<@& I1F 1 . =' 9' C< G GB6A;' 9B; ' (WM< IA6' EA=' . ;<' F . G; . 1=<@' CA ' C< & A @' <F><;& D ' G; G =1 ?' A ' A . <= & A ' F< 6 = ' A6& C1=' G GB6A;1 ' ; .' C< F<9 ; C' C< < @<A0 I B;<@& DB ' 1 ' IA1 & ' = ;B??6< A?A1 =' C< <I 6B 1 ' C< 1 =B; ;<F0 1 A; ' . I< . < =' 1 ' +A;1=' <P < @<@' ' C< G; I1 F<=' I<; EC<;< C< G< G6< 9 ; . <@' C< . =<6I<=' 1 ' . B 1F1GA61 1<=' A @' A 1 A6' ?BA;@=' ; G=' 9' A; . <@' . < ' ;AI<;=<@' C< F B ; & G166A?1 ?' A @' DB; 1 ?' C< FCA <ABP& A @' ?1I1 ?' ' C< 96A . <=' C< 1 6< @<<@=' 9' C< =<1? <B;=' C< ==< . D6 ' C G<@' ' FA6 .' C1=' 9B; & A @' 1 ' GA; ' ';< . I< 1 =' FAB=< D ' AD 61=C1 ?' C< . = ' @< <= <@' G;1I16<?<=& A @' G; F<<@<@' ' <99<F ' C1=' ;<9 ; .' ' C< F<6<D;A <@' 1?C ' 9' C< 61' 9' B?B= ' 1F . < @< A166<=' ?AI<' C< =1? A6' 9 ;' =AF;191F<=' D ' G; G =1 ?' C< ;<@< . G 1 ' 9' C< # 9<B@A6' ;1?C =& A @' C< =BGG;<==1 ' 9' I166<1 ' =<; I1F<=' C< 7$G @ @$@&<M' G;1I16<?<@' F6A==<=' ;1IA66<@' <AFC' C<;' 1 ' . A>1 ?' 61D<;A6' G; 0 G =A6=& A @' AGGA;< 6 ' A6= ' 1 ' GA ;1 1= . ' (B ' . A ' 9' C< @<GB 1<=' 9' C<=< ;@<;=& . < . D<;=' 9' C< ;1?C ' =1@<' 9' C< ==< . D6 & 6 ' F ;1DB <@' ' @<= ; ' <I<; C1 ?' 1 ' C< A F1< ' = F1A6' = = < . ' 1 ' C< C G<' 9' I<;0 C; E1 ?' <I<; C1 ?& A @' CB=' D;1 ?1 ?' AD B ' A' ;<AF 1 ' EC1FC' C<

" ' : 4' ' 8* '

D<61<I<@' ' D<' 1B<I1 AD6<' DB=<=' A @' G;1I16<?<=' E<;<' =BGG;<==<@N' I <=' E<;<' GA==<@' 9 ;' C<' ;<@< . G 1 ' 9' C<' 1 C<=' A @' <1;' F I<;=1 ' 1 ' A' G<FB 1A; ' AP' 9 ;' C<' =BGG;<==1 ' 9' <PF6B=1I<' CB 1 ?' ;1?C =' C<' AD 610 1 ' 9' =<1? <B;1A6' KB= 1F<=' C<' =A6<' 9' . A?1= <;1A6' 991F<=' C<' 1 <JBA61 ' 9' APA 1 ' C<' A A <=' 9' C<' B;' 9' . <' A @' 9' C<' G6B;A61 ' 9' D< <91F<=' 1 A66 ' C<' EA;@< =C1G=' A @' . A= <;=C1G=' E<;<' =BGG;<==<@' A @3 C<' ==< . D6 ' D<= E<@' BG ' B1=' : ' C<' 1 6<' 9' C<' <= ;<;' 9' ;< FC' 1D<; ' ' C1=' . < . ;AD6<' 1?C ' A66' ;< FC . < ' E<;<' ;< @<;<@' <JBA6' 1 ' C<' < <' 9' C<' 6AE' A @' E<;<' A66' @<F6A;<@' <JBA66 ' A@ . 1==1D6<' ' A ' 991F<=' A @' < . G6 . < =' E1 C B ' A ' C<;' @1= 1 F 1 ' CA ' CA ' EC1FC' . 1?C ' D<' D<= E<@' D ' I1; B<' ;' A6< ' (B ' EC16=' C<' ==< . D6 ' CB=' =E<G ' AEA ' . A ' B ;<A= AD6<' =CAF>6<=' A @' B KB= 191AD6<' D= AF6<=' 1 ' C<' EA ' 9'G;1IA <' A@IA F< . < ' 1 ' A ' C<' =A . <' 1 . <' 61?C <@' A ' B <P ' 1 ?B1=CAD6<' 96A . <' 9' A . D1 1 ' 1 ' <I<; ' C<A; ' D ' =< 1 ?' ' D B @=' ' . < 3=' C G<=' DB ' C =<' EC1FC' C< ' C< . =<6I<=' F B6@' G<;F<1I<' 1 ' C<' 61 . 1 =' 9' C<1;' E ' . <;1 =

C<' ==< . D6 ' EA=' @1I1@<@' A ' C1=' G<;1 @' 1 ' C;<<' G;1 F1GA6' GA; 1<=N

L>7<$@A' $+' <M@' AA@ ; J#R

CA ' 9' C<' B;' A @' C<' G;1I16<?<@' ;@<;=' F =1= 1 ?' FC1<96 ' 9' C<' 6<;? ' A @' C<' D6<==<' 9' EC1FC' C<' . = ' G; . 1 < ' ;A ;=' E<;<' C<' DDW' AB; ' A @' AMA6<=' A' FAIAC ' 991F<;' A @' EC1FC' @<=1;<@' A' = 1 B 1 ' . @<66<@' ' CA ' 9' ?6A @' <F><;' B 1<;' A < @A6' A @' A6 B<' E<;<' A ' C<' C<A@' 9' C<' =<F @' GA; ' EC1FC' F =1= <@' FC1<96 ' 9' C<' . 1 ;1 ' 9' C<' D6<==<' N A @' C<' ;< . A1 @<;' 9' C<' ==< . D6 ' 9 ; . <@' A' C1;@' GA; ' EC1FC' EA=' GG =<@' ' C<' <P1= < F<' 9'A ' A;1= F;A 1F' @1= 1 F 1 ' D< E<< ' C<' IA;1 B=' F6A==<=' 9' C<' A 1 ' C1=' 6A=' GA; ' EA=' @1I1@<@' E1 C1 ' 1 =<69' 1 ' IA;1 B=' 9AF0 1 =' D< E<< ' EC1FC' C<;<' EA=' 61 6<' CA; . ' ' <' 9' C< . ' (A166 ' A @' A9A < <' E<;<' G; . 1 < ' N 1 ' A C<;' C<' . =' 1F<AD6<' E<;<' C<' . < . D<;=' 9' A' 9A . B=' K 1B . I1;A <' EC1FC' EA=' A6EA =' A;@< ' 1 ' C<' =BGG ; ' 9' C<' . = ' G GB6A;' G; G =1 1 =' A @' EC1FC' F =1= <@' 9' %BG ; ' A' F B F166 ;' 9' +A;61A . < ' 9' 6 <6' 6<PA @<;' @<' A . < C' A @' 9' C<' <6 JB< ' (A . AI<' 1 A66 ' = . <' 9<E' 9' C1=' C1;@' GA; ' @1=0 1 ?B1=C<@' C< . =<6I<=' D ' C<1;' ;<I 6B 1 A; ' I1 6< F<' DB ' C<1;' 1 96B< F<' EA=' = 166' E<A>' N A @' A . ?=' C<=<' EA=' <' EC =<' A . <' C< ' D=FB;<' CA=' =1 F<' D<F . <' DB ' ' 9A . B= , D<=G1<;;<' ' 9 B; C' GA; ' . 1?C ' D<' ;<F> <@' A=' <P1= 1 ?' 1 ' C<' ==< . D6 ' CA ' 9' C<' %B><' 9' ;6<A =' (B ' 1 ' EA=' IA?B<' A @' B @<F1@<@' 1 ' 1 =' I1<E=' A @' 19' 1 ' ;<A66 ' <P1= <@' 6

<I<; '@1;<F 1 'N 1 'EA=' ;<= 6I<@' ' . A;FC' ' <;=A166<=&A @'A' . A ' A . <@' A166f1 @' 99<;<@' ' F @BF ' C< . ' 1 CC<6@' 9; .'1 =' GB;G =<' D ' A0 9A < <' @B;1 ?'=<I< ' C ;B;=&1 '=<' B 'A '6< ? C&A @' 9166<@' <;=A166<=' E1 C' <;; ;' ' F 961F 'CA@' A6;<A@ ' A><' G6AF<' D< E<< '1 'A @' C<' A6' (@ ' 0BA;@&EC< ' A9A < <' A;;1I<@'A ' C<' C<A@' 9' C<' A 1 A6' 0BA;@' 9'+A;1=&A @'D 'C1=' G;<=< F<';<= ;<@' 4 ' & ;@<;' C16=' <I<; ' <' EA=' A=6<<G& C E<I<;& = . <' 9' C<' G GB6AF<3 9 B @' <' 9' C<' ?A <=' 9' C<' GA6AF<' G< & A @' < <;<@& FA661 ?' ' 61<1;' F . ;A@<=' '9 66 E' C<' A61 . 'EA=' ?1I< & A @'A'91?C ' >' G6AF<' D< E<< ' C<' G< G6<' G @' C<' 19<' 0BA;@=& . A ' 9' EC .'C<; 1FA66 '@1<@'A ' C<1;' G =& F; 1 ?& [' AI<' C<' LB<< 'z`' A;1<' 1 < <& 1 9 ; . <@' 9' C<' @A ?<;& 96<@' CA69 @;<==<@' ' C<' -1 ?' A9A < <' CB;;1<@' ' C<' =F< <' 9' AF 1 ' C<' ;< FC' 0BA;@=' CA@' A6;<A@ '? <' ' C<' A==1= A F<' 9' C<' 19<' 0BA;@='N A @' A9A < <'=BFF<<@<@&A ' C<' G<;16' 9'C1=' 619<& 1 ';< . I1 ?' C<' . D' 9; .' C<' GA6AF<' AGA; . < =' C<' . B6 1 B@<' @< . A @<@' E1 C' 6 B@'F;1<=' CA ' C<' -1 ?'=C B6@'AGG<A;& A @3 B1=' : ' =C E<@'C1 . =<69' ' C<' ?;A @'DA6F ' 9' C<' FCA <AB' (B ' 1 'EA=' C<' LB<< ' <=G<F1A66 ' EC 'EA=' C<' DK<F ' 9' C<' G GB6A;' <PF1 < . < 'N A @' A9A < <& AGG<A;1 ?' E1 C' C<;' D<=1@<' C<' -1 ?& >1==<@' C<;' CA @' E1 C' ;<=G<F ' C<' F; E@' AGG6AB@<@& DB 'I<C< . < 6 '@< . A @<@' CA ' C<' -1 ?'=C B6@'=<' B ' 9 ;' +A;1=' B1=' : ' 4@<6@<@' ' C1=' @< . A @' A6= & A @' ' C<' I<; '=A . <' @A ' G; F<<@<@' C1 C<;' E1 C' C1=' 9A . 16 & <=F ; <@' D ' C1=' 0BA;@=& A @' AFF . GA 1<@' D 'A' C1@< B=' A @' D6 @ = A1 <@' . D' C<' G;1 F1GA6' ;<=B6 ' 9' C1=' <I< 'EA=' 'G6AF<' C<' B; 'A ' C<' . <;F ' 9' C<' . B6 1 B@<'N A @' 1 ' 9166<@' E1 C' C ;; ;' A @' A99;1?C ' A66' C =<' EC ' @;<A@<@& E1 C' ? @' ;<A= & A' . D' ? I<; . < & A @' 1 ' . A1@<' . A ' . < . D<;=' 9' C<' A 1 A6' ==< . D6 ' ;<= 6I<' ' ADA @ ' 1 ' A66 66< @A6' A @' B 1<;' E<;<' 9' C1=' B . D<;& A @' C<' 6A <;' < @<AI B;<@& E1 C B ' =BFF<==& ' ;A1=<' %ABGC1 & C1=' G; I1 F<& A?A1 =' C<' A 1 A6' ==< . D6

C1=' A < . G ' D ' B 1<;& A6 C B?C' B =BFF<==9B6& <PF1 <@' 9<A;=' 9' C<' @A ?<;=' 61A ' . 1?C 'A;1=<' 9; .'G; I1 F1A6' ;?A 1MA 1 =' <I<;A6'G; I1 F<=& 1;;1 A <@'A 'CAI1 ?'6 = & E1 C' C<1;' G;1I16<?<=& C<' ?BA;A <<=' EC1FC' C< ' CA@' G ==<==<@& =1 F<' C<1;' 1 . 1 & A?A1 =' C<' A;D1 ;A; ' G E<;' 9' C<' ; E ' A @' C<' < ;A6' 0 I<; . < & 9 ; . <@& 1 ' C<' G1 1 ' 9' C<' ==< . D6 & = A <=' ' IA=' A @' 1 @<G< @< & A @' 1 ' @<=1;<@' ' ;<@BF<' C<1;' <P < 'A @' '=BDK<F ' C< . ' ' A ' B 19 ; .' . @<' 9'A@ . 1 1= ;A 1 ' 1 C' 611=' DK<F ' 1 ' A@ G <@& 1 ' %<F< . D<;& 2 !& A' G; K<F ' EC1FC&

.' 8 ! ' 5 ' : ! ! >' '8* -'

A6 6K B?C' =<; I1F<AD6<' A=' A' G;<I< 1I<' 9' F1I16' EA;(' DA@' I<; 'B 9 ; B A# # 7@AD#<A'

C1=' G6A (' EC1FC(' EA=' @<I1=<@' D ' C<' < AGC =1F1A ' 19< <=(' @1I1@<@' ' ;A F<' 1 '<1?C C;<<' @<GA; . < =(' <AFC' 9' HC ='<JBA6

7>+?@' $+<B' ?0' >7<; @+<A' >+C' @S' #@?<B7>#' KÅ<@ ; Å <P < ' AFC' @<GA; . < ' EA=' @1I1@<@' 1 '@1= ;1F =N' A @ <AFC' @1= ;1F '1 'FA =' C< 'E<;<' 'D<' ? < . <@' 1 'A' C1<;A;FC1FA6' A @' B 19 ; .' . A <;' AFC' @<GA; . < ' A @' @1= ;1F 'CA@' A ' A@ . 1 1= ;A 1I<' F B F16(' A @' A ' <P<FB 1I<' @1;<F ; (C =<' m' C<' @1= ;1F 'D<1 ?' =BD=<;I1< ' ' C =<' 9';C<' @<GA; . < ' C<' FA (' F . G =<@' 9'91I<' ;' =1P' F . . B <=(' EA=' A' =1 . G6<' <6<F ;A6' @1I1=1 ' C<' A@ . 1 1= ;A 1 ' 9' CW' F . . B <' EA=' F 91@<@' 'A' . B 1F1GA61 'F =1= 1 ?' 6 A' B . D<;' 9' . < . D<;' G; G ; 1 <@' ' C<' G GB6A 1 ' I<; C1 ?' 1 ' C1=' G6A 'CA@' A ' <6<F ;A6' DA=1=(' DB ' 1 'CA@' . A ' @<?;<<=' C<' F1 1M< =' EC ' GA1@' AP<=' <JBA6' 1 ' IA6B<' ' C;<<' @A =3 6AD B;' E<;<' F =1@<;<@' AF 1I<' F1 1M< =(' A @' 9 ; . <@' G;<61 . 1 A; ' A==< . D61<=' '=<6<F ' 61<' <6<F ;'=N C<' A <;(' EC ' E<;<' =<6<F <@' 9; .' A . ?=' C<' F1 1M< =' EC 'GA1@' AP<=' 9' C<' IA6B<' 9' < '@A =36AD B;(' =<6<F <@' C<' @<GB 1<=' 9 ;' C<' A 1 A6' ==< . D6 (' C<' A@ . 1 1= ;A 1 ' 9' C<' @<GA; . < ' C =<' 9' C<' @1= ;1F ' C<' . B 1F1GA6' <6<F 1 =' E<;<' F @BF <@' ' C<' =A . <' G;1 F1G6<' 611=' @1I1=1 ' !7>G@'?B+A@0 ;A F<' 1 '= . A6' G ; 1 =' A . <@' @<GA; . < =(' F ;1 : E=<1;1 ;fA1' ###<@' <I< BA66 ' . ;<' CA ' A 'AF =' 9' C<' . = ' AD= 6B <' GA$B+A' - 1 ?=' ;' 1 1= <;=' '1 F;<A=<' C<' G E<;' EC1FC(' B @<;' C<' A . <' 9'F< ;A6' A@ . 1 1= ;A 1 (' C;<A < =' A ' C<' G;<=< ' @A ' '=BDK<F ' ' 1 =<69' A66' ;1?C =' A @' '6<A@' C<' A <' '1 <;9<;<' 1 ' A66' G;1IA <' . A <;= Y' ' EA=' C1=' @1I1=1 ' EC1FC' D; >< 1 ' ;A F<' C<' FCA1 ' 9' ;A@1 1 =(' EC1FC' D ' @<= ; 1 ?' C; B?C B ' C<' >1 ?@ .' C<' G;<= 1?<' 9' A' GA=' C1= ; ' A @' 61<' 1 96B< F<=' G ==<==<@' D ' 6 FA61 1<=(' ;< @<;<@' +A;1=' C<' DB; 1 ?' 9 FB=' 9' A66' A . D1 1 =' A @' A66' 1 ;1?B<=(' A=' 1 'EA=' CA ' 9' A66' G E<;' C<;<' EA=' '6 ?<;'A 'F< ;<' 9'AF 1 '6<9 ' 'F B <;G 1=<' C<' @<=G 1= .' 9' C<' FAG1 A6'N C<' 619<' 9' C<' A 1 'EA=' @;AE ' . ;<' A @' . ;<' 9; .' 1 =' <P ;< . 1 1<=(' A @' +A;1=' AD= ;D<@' ;A F<

. <' 6A;?<' G; I1 F<=' A < . G <@' ';<G<6' A ' ;?A 1MA 1 '= ' GG =<@' ' C<1;' 1 <;<= =' A @' @<= ;BF 1I<' 9' C<1;' G;1I16<?<=N' DB ' C<' G; I1 F1A6' A <=' A @' +A;61A . < =' G; <= <@' 1 'IA1 (' A @' E<;<' =BGG;<==<@' ' C<' ;<=1= A F<' 9'@1<=<' EA=' A6= 'A@@<@' CA ' 9' C<' F6<;? (' EC .' C<' ==< . D6

5' C<' ;<=B6' EA=' <=G<F1A66 ' . A 19<=1' A9 <;' C<' <= AD61=C . < ' 9' C<(' G;<9<F B;<d B @<;' C<' =B6A <

" ' ! /' " ⁋ : !>' ' 8 '

C<6@' A ' C<' A F1< ' F I< ' 9' C<' SAF D1 =⁄ 9; .' EC< F<' 1 ' ;<F<1I<@' 1 =' A . <ℕ DB ' C1=' F6BD' = ' <P < @<@' 1 =' I1<E=⁄ A @' '@<=1;<@ ' <P<;F1=<' A ' 1 96B< F<' I<;' C<' ==< . D6 ⁄ C<' . B 1F1GA61 ⁄ A @' C<' G GB6AF<' =' 91;= ' . < . D<;=' ADA @ <@' 1 ⁄ A @' E<;<' ;<G6AF<@' D ' I1 6< ' A @' A . D1 1 B=' . < ⁄ C<' 9;1< @=' 9' @1= ;@<;⁄ . < . D<;=' 9' C<' F . . B <⁄ ;' =1 . G6<' F1 1M< =' C< ' 9 ; . <@' A661A F<=' E1 C' =1 . 16A;' A== F1A 1 =' 1 ' C<' G; 0 I1 F<=⁄ A @' ;A1=<@' =1@<' D ' =1@<' E1 C' C<' 6<?A6' G E<;⁄ <' EC1FC' EA=' = 166' . ;<' 5G E<;9B6⁄ A @' EC1FC' =BFF<==1I<6 ' I<;;B6<@' A @' @<= ; <@' C<' C<;

C<' < . 1?;A 1 ' F 1 B<@' C<' - 1 ?3=' AIX =' 6<9 ' ;A F<ℕ A @' B1=' : ⁄ EC ' EA=' =B=G<F <@' 9' E1=C1 ?' 'K 1 ' C< . ⁄ EA=' A;;<= <@' D ' C<' G< G6<⁄ A @' @< A1 <@' 1 ' +A;1=' A ' C<' . . < ' EC< ' C<' EA=' G;<GA;1 ?' ' JB1 ' C<' FAG1 A6' 9 ;' A1 ' 6 B@' C<' ==< . D6 ⁄ EC16=' G; F6A1 . 1 ?' C<' 1 I1 6AD161 ' 9' C<' A;FC⁄ @<F6A;<@' CA ' C1=' 961?C ' 9; .' C<' >1 ?@ .' E B6@' 6<A@' ' C<' 9 ;9<1 B;<' 9' C1=' C; <' @' E' C<' @<GB 1<=⁄ CA I1 ?' @<= ; <@' A66' G;1I16<?<=' A @' F . G6< <@' C<' = 1 B 1 ' AFF ;@1 ?' ' C<1;' E ' 1@<A⁄ D<FA . <' <;;191<@' A ' C<' 1 . . < =<' I 1@' EC1FC' C< ' CA@' F;<A <@' A; B @' C<' C; <⁄ A @' . A 19<= <@' A' . ;<' . A;FC1FA6' < @< F

C1=' ;<AF 1 "1 ' 9AI B;' 9' A' FC1<9'AB C ;1 'EA=' @B<' 1 'A'?;<A ' . <A=B;<

) $7>J@E+(A' 7@0' 1;AD<AB⁄ EC =<' =BGG ;' CA@' D<< ' GB;FCA=<@' D ' C<' <D7+'<B' BD7<' B; ⁄ A @' EC ' @<=1;<@' A ' C<' =A . <' 1 . <' '= ;< ? C< ' C<' C; <' A @' '=<FB;<' A66' C<' IA6BAD6<' ;<=B6 =' 9' C<' <I 6B 1 ' (B ' 1 ' ;@<;' CA 'C1=' E ;@=' =C B6@' D<' ;<=G<F <@⁄ 1 ' EA=' <F<==A; ' CA ' C1=' FCA0 ;AF <;' =C B6@' D<' ;<=G<F AD6<' C<' ?B16 ' ? 6@' EC1FC' C<' CA@' ;<F<1I<@' EC<;<E1 C' '=BGG6 'C1=' @1== 6B <' <PG< =<=⁄ @<G;1I<@' C1 . ' 9' CA ';<=G<F ' E1 C B ' EC1FC' G 61 1F1A =' A;<' 1 ' . = ' FA=<=' ;< @<;<@' 1 FAGAD6<' 9' <P<;0 F1=1 ?' A '1 96B< F<' C<' F 91@< F<' EC1FC' EA=' @B<' ' C1=' ?< 1B=' EA=' ;<9B=<@' 'C1 . ' 'AFF B ' 9'C1=' FCA;AF <;'ℕ A @' C<' - 1 ?' C1 . =<69⁄ EC16= ' AF> E6<@?1 ?' C<' IA6B<' 9'C1=' A@I1F<⁄ 9 66 E<@' 1 ' E1 C' <;; ;' ' <' @<G6 ;<@' . ;<' CA ' 1;AD<AB' C<' 9A A6' =1 BA 1 ' EC1FC' C<' CA@' C1 . =<69' F;<A <@' ['' 'GA ' I<; ' @<A;6 ⁄`' C<' 9 < ' =A1@⁄ ['9 ;' C<' 9AB6 =' 9' . ' B C2 @' B⁄ G ;' +;1 F<⁄ E166' CAI<' '3GA ' @<A;6 ' 9 ;' C< . ' A6= ' `' ['' >' A; 1 . @' B⁄`' C<' <' @A ' =A1@' ' <' 9' C<' ; 6 =⁄⁄1 ' A' <' 9' G; 9 B @' F I1F 1 ℕ ['1 ' 1=' ⁄ ' A6 <⁄ EC ' A . ' FAGAD6<' 9' C 6@1 ?' 1 ' FC<F>' C<' A A;FC ' EC1FC' 1=' AD B ' '@<I B;' B⁄ B;'9;1< @=⁄ C<' C; <⁄ C<' +;1 F<' ' . B= ' D<' 61= < <@' ⁄ ' . B= ' D<' 9 66 E<@⁄ ;' E<' =CA66' A66' G<;1=C `' %1=F 1;;=1 ?' 'A C<;' FFA=1 ' E1 C' ADA 1=⁄ C<' C;<E' A' =A@

A @' G; GC< 1F' ?6A F<' ' C<' 911 B;<' 9' C<' F B ; ⁄' A @' D; ><' A' = 6< . '
=16< F<' E1 61' C<=<' E ;@=⁄' [' C⁄' 19' ' F B6@' CA I<' D; B?C '1 ' C<' <I 6B0
1 ' =BF61' A' FCA;AF <;' A=' CA ' 9' A6<=C<;D<=⁄' ECA ' A' @<= 1 ' . 1?C ' 'CA I<'
=<FB;<@' 9 ;' . ' F 1 . ' ' E' ?6 ;1 B=' . 1?C ' 'CA I<' . A@<' . ' A . <' z`'
' =G1 <' 9' C1=⁄' 9AB6 =' C1=' ?< 1B=' = 166' . A@<' C1 . 'A' G;<@ . 1 A ' . < . D<;' 9'
C<' A 1 A6' ==< . D6 ⁄' A @' C<' =BFF<<@<@' 1 ' G; FB;1 ?' C<' ;<K<F 1 , '
C<' ?; B @' CA '1 ' EA=' A '1 9;1 ?< . < ' 9'1 @1I1@BA6' 61D<; , 9' A' I1 6< '
@<F;<<' G; G =<@' A?A1 = ' C<' < . 1?;A =' C1=⁄' C E<I<;⁄' EA=' C1=' 6A= ' ;1B . GC '
6 C B?C' C<' EA=' 6 '9 ; ' <A;=' 9' A?<' C1=' F = 1 B 1 ' CA@' D<< ' @<0
= ; <@' D ' <I<; ' =G<F1<=' 9' <PF<==⁄' A @' C<' AEA1 <@' A @' <PG<F <@' @<A C' 1 '
C<' . 1@= ' 9' C<' . = '9;1?C 9B6' =B99<;1 ?=' ' C1=' A? ' C<' = 166' C B?C '
A @'=G ><' 9' ;A F<⁄' A @' 9' C<' = A <'1 'EC1FC' C<' 6<9 'C<; ' [' 'D<A;' E1 C1 '
. 'C<A; ⁄`' C<' =A1@⁄' [' C<' . B; 1 ?' E<<@=' 9' C<' . A;FC ⁄'
C<' ;< . A =' 9 'EC1FC' A;<' AD B ' ' D<' @<= ; <@' D ' C<'
9AF 1 = `' ' 9<E' . 1 B <=' A9 <;' B <;1 ?' C<=<' E ;@=' C<' @1<@ ' C<' A0
1 A6' ==< . D6 ' A < @<@' C1=' 9B <;A6' 1 ' A' D @ ⁄' A @' CA@' C1=' ;< . A1 ='
F I< <@' ⁄' C<' <E' FCB;FC' 9' ' 0< <I1] I<⁄' EC1FC' EA=' @<= 1 <@⁄' . @<;'
C<' A . <' 9' C<' +A C< ⁄' ' ;<F<1I<' C<' ;< . A1 =' 9' . A ' ?;<A ' . < '
1;AD<AB⁄' A9 <;' CA I1 ?' . A@<' C<' ?;<A <=' <99 ; =' '=< '1 ' . 1 ' C<'
;<I 6B 1 A; ' ;;< ⁄' CA@' A6 <' D<< ' FAGAD6<' 9' < . G ;A;16 ' . @<;A 1 ?'
1 =' I1 6< F<⁄' A @' C1=' @<A C' EA=' 1 ' C1=' ;<=G<F ' A' GBD61F' FA6A . 1 ⁄' A @' C<'
A 1 ' E< '1 ' . B; 1 ?' 9 ;' C1 .

C<' =B66< ' . B; . B;=' 9' C<' = ; . ' A6;<A@ ' D<?A ' ' D<' C<A;@' ' 61<'
9; 1<;' C<' < . 1?;A =' G< 1 1 <@' A66' B; G<' ' A==1= ' C< . ' A?A1 = '
+;A F<⁄' A @' 9 ; . <@' E ' D @1<=⁄' C<' <' B @<;' B@W A ' ; . =⁄' A @'
C<' C<;' 1 . @<;' C<' B ' @3 ; 1=' A ' D6< M' 611=' +;1 F<' E< '
E1 C' A6 <⁄' C1=' 1 1= <;⁄' ' C<' . G<; ;' < G 6@⁄' A @' C<' =<F;< ' @<0
F6A;A 1 ' 9' A BA⁄' =1? <@' ' C<' " C' A ⁄' 2! ⁄' EA=' %<F6A;A1 ' 9'
C<' ;<=B6 ' 9' C<1;' @<61D<;A 1 =' 'G; . 1=<@' ' B1=' : ' [[[YQ5
C<' A==1= A F<' 9' A' F A61 1 ' 9' EC1FC' B= ;1A⁄' C<' F1;F6<=' 9' O<; . A ⁄'
E1 M<;6A @⁄' A @' C<' - 1 ?=' 9' A;@1 1A⁄' GA1 ⁄' A @' +;B==1A' E<;<' 'D<'
. < . D<;=' (B ' B1=' EA=' A P1 B=' ';<= ;<' C<' . A;FC ' D 'C1=' E '
<P<; 1 =⁄' A @' 9 ;' C1=' GB;G =<' C<' < @<A I B;<@' ' ;<AFC' . <@ ⁄' '
K 1 ' C1=' A; . 'B @<;' C<' F . . A @' 9' (B166W ' <' 9 ; . <@' C1=' G6A ' 9'
<=FAG<' 1 ' F F<; ' E1 C' C<' ?< <;A6⁄' EC ' G = <@' @< AFC . < =' A ' 1 <; I A6='
?' C<' ; A@' EC1FC' C<' - 1 ?' EA=' 'G; F<<@' D ' ' C<' " C' SB <⁄' A '
d1?C ' 1 . <⁄' C<' A6' 9A . 16 ' 1==B<@' 9 ; C' @1=?B1=<@' 9; .' C<' B16<;1<=⁄

%<= . B61 =' CA;A ?B<@' A ' 1 . . < =<' F; E@(' A @' <PF1 <@' C< . ' ' 1 =B; '
< 1 ' C<' G<;16' E' D<FA . <'1 . . 1 < #' A @' C< ==< . D6 ' @1;<F <@' C<'
. 1 . 1F1GA61 ' ' EA FC' I<;' C<' GBD61F' =A9< ' A9< < <' A @' (A166 '
G; F<<@<@' ' C<' 61A . G' @<' A;=' A ' C<' C<A@' 9' A' B . <; B=' D @ ' 9'
_ A 1 A6' 0BA;@=' (A166 ' G; B F<@' C<' 6<?A6' =B . . =(' A @' CA@' C<'
;<@' 96A?' @1=G6A <@' C<' . B6 1 B@<';<=G @<@'D ' A'=C E1<;' 9' = <=N A @'
C< (' A=' A66' . <A =' 9' F F161A 1 ' E<;<' A ' A ' < @(' A @' 1 ' D<FA . <' <F<==A; '
' CAI<' ;<F B;=<' ' 9 ;F<(' A9A < <' ?AI<' ;@<;=' ' C<' ; G=' '
91;<' C<' =<F @' @1=FCA;?<' EA=' 9' . B;@<; B=' <9 <F(' A @' @1==1GA <@' C<'
F; E@' C<' . B6 1 B@<' 96<@(' A @' <I<;'9 ;?AI<' <1 C<;' A9A < <' ;' (A166 '
9 ;' CAI1 ?' G<;9 ; . <@' C<1;' @B ' ' C1='9A A6' @A

C<=<' @Jh6 ;AD6<' @1==< =1 =' 6<@' C<' A@I<;=A;1<=' 9' C<' <I 6B 1 ' '
C<' F . . 1 A6' 9'1 . G;B@< 'AF =(' A @' C<' 6 ' C B?C ' 9' C<' A11 1 11(
< . 1?;A =' EA=' C E' ' = 196<' 1 ' D ' C<' B 1 <@' A1@' 9' A66'
B; G<' =1<B;' A==B . <@' A ' (;B==<6=' C<' 1 6<' 9' <?< N (B166@'=< '
A' 91<;F<' 6< <;' ' C<' ==< . D6 ' C<' . G<; ;(' C<' 61 ?' 9
S;;B==1A(' A @' B ' @' ; 1=' 5 . <' ?< Ç<;' A ' +16 1 M(' 1 M(' 2 CSB6 (
' EC<;<' C< ' =1? <@(' A ' C<' ;1=>' 9' F . G; . 1=1 ?' C<' - 1 ?' '
EC .' C< 'E1=C<@' '@<9< @(' C<' ;<A ' 9' C<' 2 C' SB6 ' ' C<' @ FB0
. < ' C< ' ;<A <@' C<' FAB=<' 9' B1=' : ' A=' C<1;' E (' @< . A @<@' CA '
C<' =C B6@' D<' ;<G6AF<@' BG ' C<' C; <(' A @' CA ' C<' ==< . D6 '=C B6@' D<'
@1== 6I<@N C;<A < 1 ?' CA ' 19' C1=' E<;<' '@ <(' C< 'E B6@' 1 961F ' 61<'
. = ' <; ;1D6<' FA6A . 1 1<=' BG ' ;A F<' C<' ==< . D6 (' ?;<A 6 '1; ;1 A <@('
;<G61<@' ' C<=<' C;<A =' D '6<I 1 ?' A'CB @;<@' C B=A @' A 1 A6' 0BA;@=('
A @' GB 1 ?' 1 =' 9; 1<;=' 1 'A' = A <' 9' @<9< F<' ' C<' . <A 1 . <' C<' < @'
9' 1 =' <; . ' 9' 961F<' @;<E' <A;(' A @' C<' F I FA 1 ' 9' C<' <6<F ;A6'
F 66<?<=' EA=' 91P<@' D '1 '9 ;' C<' 7 C' B?B= ' '9A A6' @<F;<<(' EC1FC' CA@'
D<< ' GA==<@' D<9 ;<' C<' @<GA; B;<' 9' C<' - 1 ?' 9 ;' A;< <=(' CA@' 1 <;0
@1F <@' A ' 9' C<' . < . D<;=' 9; .' 9 ; . 1 ?' A'G ; 1 ' 9' C<' <P ' ==< . D6 '
' IA1 ' CA@' %BG ; ' <PF6A1 . <@(' Q' 1 F<' E<' A;<(' <= AD61=C1 ?' G;1 F1G6<=('
D E' 1=' 1 ' CA ' E<' @ ' ';<F ? 1=<' C<' 9AF ' CA ' = AD161 ' 1=' A6= ' A' G;1 F1G6<'
5 9' ? I<; . < 'c` C<' @<F;<<' EA=' GA==<@(' A @' C<' . A 1A' 9' @1=1 <;<= <@0
<=' D<F . 1 ?' F A?1 B=(' (A166 ' ;<=1? <@' C<' . A ;A6 (' A @' A9A < <'
C<' F . . A @' 9' C<' A 1 A6' 0BA;@=' (' ' EA=' 1 ' C1=' EA ' CA ' C<'
?B1@A F<' 9' C<' <I 6B 1 ' EA=' ?1I< ' I<;' ' <E' . < ' EC ' F . . < F<@'
_A C<;' 9 ;' C<' GB;G =<' 9' D A1 1 ?' 9 ;' 61< . =<6I<=' ;1< 'A @' 9 ; B <
(<9 ;<' @1== 6I1 ?(' C<' ==< . D6 ' F @< =<@' 1 =' F = 1 B 1 A6' @<F;<<=

+ '

*+' +1(& (7+' &&+

' # ' =1' - @ ! 2! (' # ' "1 ' 1 @ ! 2!

*+' B; (C< D6<==<(A @' C< 6<;? (CA@' '1 96B< F< I<;' C< <E' <6<F 1 =(EC1FC' E<;< F @BF <@' =1 . G6 '1 ' AFF ;@A F< E1 C' G< 1 1 9 C< C< G GB6A;' E166(A @' C< ==< . D6 ' G< <@' 1 =' =1 1 ?=' ' 1'< E 9B ' F' C< =' F D<;(2! ' '@<F6A;<@' 1 =<69' A=' = ' A=' 1 ' EA=' YYHH5 _ A==< . D6<@' C< <?1=6A 1I< ==< . D6 (A @' >' 1 ' AFF ;@A F< E1 C' C< G; I1=1 =' 9' C< G = 1 B 1 A6' F (A . 1@=' C< AGG6AB=< 9' ?B ; LB>$! B+' B3' C< =G<F A ;=(C< A C' <1 C<;' '61I< 9;<< ;' '@1<' C< . 1 ;1 ' 9' C< 6A=' ==< . D6 ' EA=' C< . AK ;1 ' 9' C1=(A @' 61< GA; 1<=' 1 ' EC1FC' 1 ' EA=' @1I1@<@' @1@' ' 9A16' ' D< =G<<@16 ' AGGA;< ' C< 1?C (F . G =<@' 9' . < ' 91; . 6 ' A AFC<@' ' C< = 1 B 1 (9 ; . <@' C< <B166A ' GA; (EC1FC' EA=' =BGG ; <@' D ' C< F6BD' 9' CA ' A . <(C< A 1 A6' OBA;@(A @' C< A; . N DB ' 1 ' EA=' ' 6 ?<;' @ . 1 A ' 1 ' C< ==< . D6 (A @' 1 ' =G<<@16 ' 1<6@<@' C< 1 . G ; A ' A99A1;=' 9' C< . B 1F10 GA61 ' ' 1 =' A@ I<;=A;1<=' 9' C< <9 (EC1FC' F . G =<@' C< O1; @1=' GA; (A ' C< C<A@' 9' EC1FC' =C < C< F<6<D; A <@' ;A ;=' 9' 61< O1; @<(9; .' EC1FC' 1 ' >' 1 =' A . <(<;? 1AB@(OBA@< (O< = *((;1== (@ ;' F< (A @' C< 9B;1 B=' = A;@' C1=' GA; ' EA=' @1=G =<@' ' CA I< ;<F B;=< ' C< . =' I1 6< ' . <A=B;<=(A @' ' AGG<A6' ' C< . B6 1 B@< ' A1@' 1 ' 1 ' FA;; 1 ?' 9 ;EA;@' C< <I 6B 1 ' C<' < ;< 9' C< <?1=6A 1I< ==< . D6 ' A=' A AFC<@' ' C< <E' ;@<;Y 9' C1 ?=N DB ' C< EA ' 9' F F<;' A . ?=' 1 =' . < . D<;=' A @' C<1;' 9<A;=' ;< @<;<@' C< . ' =BD . 1==1I< ' C< I1 6< ' @<F1=1 =' 9' C< <9 ' 1 C B ' C< @ ;=' 9' 61< ==< . D6 ' C< @< . F;A 1F' 9AF 1 ' =BGG ; <@' C< O1; @1= =(A @' 6<@' C< F6BD=' A @' C< . ' 1 B@<' D<=G1<;;< ;B6<@' A ' C< SAF D1 =N %A (A . 166< %<= . B0 61 =(AD6<' @3 ?6A 1 <(E<;< C< 6<A@<;=' A ' C< ;@<61<;=(EC1FC' EA=' = 166

□□

C<;<9 66 E<@A A6@1== 6B1 9C< B F16 C< -1 ?1<6@1 ? G;<==B;< 9F1;FB . = A F<= E9 ; . <@A O1; @1= 1 1= ; C< . =

$7B+C$A<

;< . A;>AD6< . < . D<;= 9EC1FC'E<;< O< <;A6 %B . B;1<M A;FC A @ 6A @ C< 91;A AFFB= . <@9; .C1= B C 1 ;1?B<EA= @< <; . 1 <@ =BFF<<@A <I<; F = < EA= AB@AF1 B=91F>6<A @E1 C B A G 61 1FA6F I1F 1 =DB< @ E<@ E1 CG E<;= 9><< D=<; IA 1 A @A 1 <66<F EC1FC EA= A=AF 1I< A= 1 EA= 9<; 16< 1 ;<= B;F<= C< =<F @K 1 <@ AB= <;< . ;A6= A ?;<A =1 . G61F1 9 . A <;=N DB C1= . 1 @EA= = . <ECA A;; EA <@C< A66 E<@C1 . =<69 D< F ; 66<@D C1= E19<EC C<;=<69 1<6@<@ C< F ; 6 9A @A ?<; B= < CB=1A= . A @EA= C< 619< A @ = B6 9C< O1; @1= GA;

C< 91;= . <A=B;< 9C< <E 1 1= ; CA@;<9<;< F< EA; C< . G<; ; < G 6@EA= @<A@N ;A F1= -1 ? 9(C< . 1A A @ B ?A; =BFF<<@<@C1 . 1 C< . G1;<A @C1= <6<IA 1 . A@< FCA11?< 1 C< B= ;1A G 61F 1 ;<=G<F ;A F< C< +;1 F<@< - AB 1M@< . A @<@ 1 C< A . < 9C1= B; C< ;<= ;A 1 9C< CB;FC G; G<;6 C< F6<;? C< 6A @= 9 6=A 1A C< O< A +;1 F<=A @ < < 1A C< + G< BFC EA= C< B= ;1A B6 1 . A B . B1= : ;<G61<@D G; 0 G =1 ? EA;A @C< ==< . D6 = @< <; . 1 <@ C<1 IA=1 9(;B==<6=A EC1FC EA= 1 C< FFBGA 1 9C< +;B==1A =EA= ;<= 6I<@

> >$+A< DA<7$> E< ,5

A @ FCA . D<AB EA= ;@<;<@ B @<; A><1 C< E 91;= 1 IA@1 ? F 6B . = C E<I<;E<;< =<1M<@ E1 C <;; ;A C< =1?C 9C< +;B==1A A; . A @ >961?C FCA . D<AB

$LA<7@G@7A@A

;<=1? <@C< F . . A @A @C< EA;A==B . <@A @<9< =1I< FCA;AF <; E A; . 1<= F I<;<@C< ;< FC 9; 1<;= C< ; C A @C< <A= B @<; A9A < < A @BF> <; C< A; . 9 A9A < < <P < @<@ 9; . C< =<A ?E A @CA 9BF> <;9; . C< =<66< C< SB;A

C< 91;= ;<I<;=< =B99<;<@D B; ; G= <PF1 <@?;<A A P1< A @ I1 6< @1=F < C< B; EA= AFFB=<@ 9D<1 ? 1 F . G61F1 E1 C C< < < . A @C< ==< . D6 @<F6A;<@1 = =1 1 ? G<; . A < ; ;@<;<@ 61< @1= . 1==A6 9@1< -1 ?3= F = 1 B 1 A6 ?BA;@EC1FC CA@D<< ;A1=<@D C1 . 9; . <1?C << CB @;<@ . < = 1P C B=A @A @GA==<@E @<F;<<= F ;A; C< -1 ?3= E1=C<= C< < <P16<@C< G;1<= = EC ;<9B=<@ C< A CA C< C<;<= AD61=C<@A FA . G 9E< C B=A @ . < B @<; C< EA66= 9+A;1= C< 1 1= <;= < ;<A <@C< -1 ? @<G;1I< C< ;<9;AF

7 ' ' ') ' ' ' k ' ' 8* '

1 ' ' C< B16<;1<=& C< ?A <=' 9' EC1FC' 1 ' =C >' C< - 1 ?' CA@' C< . '
G< <@& A @'G;<=< <@'C1 . =<69'A6 <'D<9 ;< C<1 =B;?< =' B . . <@'D '
C< . D' '=A F 1 ' C< E '@<F;<<=& C< ;<9 6=<@' E1 C' A@ . 1;AD6<'F B;A?<'N
DB 'C< @A;<@' '@<F61 < C< ;<@' FAG' EC1FC' EA=' G;<=< <@' 'C1 . ' A ' C<
< @' 9' A' G1><& A @' C< G6AF<@' 1 ' ' C1=' C<A@' A . 1@=' C< AGG6AB=< 9' C<
G GB6AF<' +W 1 & C< A ;' 9'+A;1=& CA@' A>< ' '= <G=' 'G;<I< ' C<
1 =B;;<F 1 'N A @'@B;1 ?' =<I<;A6' C B;=' C< 9<1? <@' ' D< 1? ;A ' CA '
B1=' : ' A @' C1=' 9A . 16 ' E<;<' <PG =<@' 1 ' C<1;' E ' GA6AF< & C<
?;<A <=' 1 =B6 =' < A;;1I<@' A ' 6< ? C& A @' CA;A ?B<@' C< . B6 1 B@<&
EC1FC' ;<A@16 ' @1=G<;=<@& =A 1=91<@' 9 ;' C< 1 . < E1 C' CAI1 ?' B ;A?<@'
. AK<= 'E1 C'1 . GB 1

C< = 1 B 1 A61= =& 1 @1? A ' A ' 611=' ZFB;;< F<& < ;<A <@' C< - 1 ?'
'?;A ' C< . 'C1=' F 91@< F<& A @' 'AFF<G ' C<1;'=BGG ; ' C<%B><'@< 6A#
@FC<9 BFAB6@ 1A F B;'G; G =<@' '<=F ;'C1 . ' ' B< & EC<;<'C< EA='
1 ' . . A @& A @' A9A < < D<= B?C 'C1 . ' 'G6AF<'C1 . =<69'A ' C<'C<A@' 9'
C1=' A; . ' (B ' A' 9A A61 'D61 @<@' C< B 9 ; B A < A;FC& A @' C< ;<0
9B=<@' A9A < < CA= < <@' '+A;1=' A @' @< . A @<@' 9' C< ==< . D6 ' C<
@<= ;BF 1 ' 9' C<'SAF D1 '=<F & A @' C<'GB 1=C . < ' 9' C< 6<A@<;=' 1 ' C<
A91I1;' 9' C<' " C'SB <' (B ' C< ==< . D6 '@1@' ' I< ' 1 I1 <' C1 . ' '
A < @' C<1;' @<61D<;A 1 =' B 16' C< 'CA@' @<DA <@' EC< C<;' C< '=C B6@' '
; 'C1 . 'A=' A'@<=<; <;' 91; .' C1=' G = ' A9A < < ;<61<@' BG ' D<1 ?' AD6<'
'F6 =< C< 6BD' D ' C<' A1@' 9' C< A 1 A6' 0BA;@=& DB ' C< A 1 A6'
0BA;@=' @1@' ';<=G @' 'C1=' AGG<A6'N A @'C< C< ';< B; <@' 'C1=' A; . &
CAI1 ?' 6 = 'A66' C1=' 1 96B< F<' A @' G G1@A;1

C< 9 ;<1? '= I<;<1? =' F 1 B<@' ' F F< ;A <' 9 ; . 1@AD6<' . A==<=' 9'
; G=' ' C< ;< FC' 9; 1<;=' N A @' C<' F61I1=1 =' 1 ' C< 1 <;1 ;' 9' C<
>1 ?@ .';< @<;<@' 1 =' G =1 1 ' . ;<' A @' . ;<' A6A; . 1 ?' C< - 1 ?' EA='
C< DK<F & 1 ' C<'@<DA <=' 9' C< ==< . D6 & 9' C< . ='I1 6< '1 I<F 1I<=&
A @' C< JB<= 1 ' 9'C1=' @< C; < . < 'EA=' A6;<A@ '@1=FB==<@& EC< & ' C<
7 C'SB6 & C< ==< . D6 '@<F6A;<@' C<'F B ; '1 '@A ?<;' 66' C<'F1 1M< =
FAGAD6<' 9'D<A;1 ?' A; . =' E<;<'=B . . <@' '< ; 6' C< . =<6I<=' N G1><=' E<;<'
@1= ;1DB <@'N A' FA . G' EA=' 9 ; . <@' A ' 1== =' N C< ;<I 6B 1 A; '<PF1 <0
. < 'EA=' A '1 =' C<1?C & A @' EA=' = 166' 9B; C<;'1 F;<A=<@' D ' C< A;;1IA6' 9'
C< W@W;W=' A;=<166A1=' 1 '+A;1=' +W 1 'D<FA . < C< DK<F ' 9' C<' G< G6<3='
A@ ;A 1 & A @' ' C<' A 1I<;=A; ' 9' C< C' SB6 ' C< 6 'F; ' 9' C<
<@<;A 1 'EA=' ['+W 1 ' ;' @<A C' `' C< 6BD' 9' C< <B166A =' EA=

F6 =<@ N C< F . GA 1<= 9 ? ;< A@1<;= A @ FCA==<B;= 9 C< A 1 A6 0BA;@ EC1FC 9 ; . <@ C< = ;< ? C 9 C< D B;?< 1=1<@ E<;< @1== 6I<@ N C< ; G= 9 C< 61 < A @ C< E1==E<;< ;< . I<@ 9; . C< FAG1 A6@ A @ <I<; C1 ?D< >< <@= . < FA A= ; GC<

C< %B>< 9 (;B =E1F>@ G;<F<@<@ D A 91<; . A 19<= @ EA= E A@IA F1 ?A C< C<A@ 9 =<I< C B=A @ + B==1A = A @ =1P <1? C B=AA@ B= ;1A =@ n <==1A =@ A @ < . 1?;A =@ B3 ( ) >+$3@A<B B3 <M@ . C< . A 19<= F A1 <@ C< . = <;;1D6< C;<A = A?A1 = #

@+A;1=@ A @ A?A1 = A66 C< F1 1<= EC1FC =C B6@ I< B;< @<9< @ C< . 0 =<6I<=@ A @ 1 = <99<F EA= G; @BF< A ?< <;A6 ;1=1 ? 9 C< EC 6< ;< FC G< G6< + A;1= C< G GB6A;GA; E1=C<@ A B6 C< - 1 ?3= AB C ;1 A F< D<=G1<;;<@ %A @ A . 166< %<= . B61 =@ +AD;< @3 ?6A 1 <@ A @ C< 1 9A . B= A;A CA;A ?B<@ C< G< G6< @ <PF1 <@ C< . A = A < 9@<61;1B . C< 8;@ B?B= @ +W 1 AGG<A;<@ D<9 ;< C< ==< . D6 A @ @< . A @<@ C< @< C; < . < 9 C< - 1 ?1 C< A . < 9 C< F . . 1 . < A @ C< =<F 1 = C1= G< 1 1 EA= ;<9<;;<@ A F . 0 . 1 << 9 I<6I< . < . D<;= 9<E @A = A9 <;EA;@= A @1=FB==1 > G6AF< A= EC< C<; A9A < < =C B6@ D< GB BG C1= ;1A6 EA= @<F1@<@ 1 C< <?A 1I< D A = . A66 . AK ;1 C< G< G6< 1 =B6 <@ C =< EC CA@ I <@ 1 C1= 9AI B; N C< =F< <= 9 @1= ;@<; ?;<E . ;< 9;<JB< @A D @A @ A @ C< 1 =B;?< = 91P<@ C< . ; 1 ? 9 C< " C B?B= 9 ; C< A AF> C< B16<;1<=N

C< ABD B;? A1 1 @ EC1 C<; C< SAF D1 = G; F<<@<@ 1 G; 0 F<==1 @ EA= C< F< ;< 9 C< 1 =B;;<F 1 N A @ 1 EA= C<;< @< <; . 1 <@ CA +W 1 A @ C< B F16 9 C< . . 1 . < A #` A 9 A =C B6@ D< ;<61<I<@ 9 A66 ;<=G =1D161 D D<1 ?; <G6AF<@ D A 1 =B;;<F 1 A6 . B 1F1GA61 C< A?1 A ;= A C< =A . < 1 . < G; F<<@<@ C< DA;;AF>= 9 C< W@W;W= A;=<166A1= A @ C< (;< = 9 ; . <@ 9 C<=< C;<A < 1 ? @< . = ;A 1 =@ C< P1; CA@ GB C< B16<;1<= 1 A = A < 9 @<9< F< N C< 1 <;1 ;@ EA= ?BA;@<@ D 9; . <1?C 1 < CB @;<@ E1==@ A @ A D @ 9 ?< 6< . < A; . <@ E1 C =E ;@= A @ G1= 6= <I<;A6 DA A61 = 9 A 1 A6 0BA;@=@ A @ A . ?= C<;=@ 61 =< 9 C< JBA; <; 9 6<= A1 C . A= A @ Y< 1 = +];<=@ EC1FC E<;< @1= 1 ?B1=C<@ 9 ; C<1; A61= =< 1 . < =@ FFBG1<@ C< F B; A;@ A @ C< <P <;1 ; G = =@ DB A B 9 ; B A < D6 E # > C<1; ;<= 6B 1 A @A @ C<1; F . . A @<; 1 FC1<9@ EA= =B . . <@

)

D<9 ;< C< <E B F16 9 C< . . B < ; < @<;A AFF 1 . 9 C1= F @BF A @ 619< . D . B;@<;<@C1 . C< = <G= 9 C< @ <6 @< 166< A <;;< C< D;<E<;1 . . <@1A <6 =BFF<<@<@C1 . 1 C1= F . . A @ A @ C< . CB= 9 B @1 =<69@<G;1I<@ 9 < 9 1 = . D= ;<61AD6< @<9< F<= C< 1 =B;?< = A; B=<@1 <I<; @1;<F 1 D C< <;;1D6< %A A@IA F<@1 =<I<;A6 F 6B . = A @G 1 <@C<1;?B = A?A1 = C< B16<;1<= C< - 1 ?E1 C ?;1<91 . G;1 <@ C1= F B < A F<;<I1<E<@C< ; G= DB 1 C< ;A >= 9 C< A 1 A6 OBA;@ C< F;1<= 9 [?61I< C< - 1 ? E<;< @; 1I <@ D C =< 9 [?61I< +W 1 Ź % E 1I1 C C< I< Ź % E E1 C C< ;A1 ;z C< G; FB;<B; = @1F3 - <@<;<; C< E< . << C< 1 =B;?< = A @ ;<A@ C< . C< A; 1F6< 9 C< 6AE EC1FC < K 1 = CA 9 ;F< =C B6@ D< ;<G<66<@ D 9 ;F< C< A 1 A6 OBA;@= =BGG ; <@C1 . DB 9<<D6 A @ C< 1 =B;?< = D<FA . < 1 =G1;<@E1 C 9;<=C AB@AF1 <@<;<; ;< B; <@ C< GA6AF< A @ @<F6A;<@ C< A6 9A . 16 CA 1 = 6 G6AF< 9 =A9< EA= 1 C< D = . 9 K1< <?1=6A 1I< ==< . D6 [< B= ? =1; =A1@ C< LB<< 61< - 1 ?A= =C< 99<;<@C1 . A G1= 6 [C1= 1= C< . . < 9 ;B= =C E B;=<6I<= B1= : ;< . A1 <@=16< 9 ;A 9<E . . < =A @ C< ?AI< C< =1? A6 9 ;@<GA; B;< A @ G; F<<@<@ C< CA66 9 C< ==< . D6 A . 1@= C< I F19<;A 1 = 9 C< G GB6AF< <;? 1AB@ G;<=1@<@A @ C< - 1 ? >C1= =<A D<=1@< C1 . DB CAD CAI1 ?;< . 1 @<@ C< ==< . D6 CA 1 F B6@ @<61D<;A < 1 C< G;<=< F< 9 C< - 1 ? B1= : A @ A66 C1= 9A . 16 GA==<@D<C1 @ C< G;<=1@< 1 C< @A;>D P 9 C< L

9 <;C< @<GA; B;< 9 C< - 1 ?9 ;C< ==< . D6 C<;< EA= AB=< 9 ;A F 961F DB A 9B;1 B= < <I<; C<6<== >G6AF< D< E<< C< E1==A @ C< A==A16A = 9 EC .C< A;=<166A1= A @ C< (;< = 9 ; . <@ C< A@IA F<@?BA;@ @<=G<;A < . A A . <@ <= <; . A EC CA@ 9 ; . <;6 D<< A 991F<;1 C< A; . @1;<F <@ C< A AF>A @ C< E1==A EC .A 91;= I 66< CA@ . A@< . A= <;9 C< A;; B=<6E<;W @;1I< DAF> D C< . B6 1 B@<@1=G<;=<@A @ <P <; . 1 A <@ C1= W C< 6A= @A 9 C< A;FC C< <E . B 1F1GA61 G; F<<@<@# C< ==< . D6 D A1 A ;<F ? 1 1 9 1 = G E<;=A @ <; . 1 A <@ 1 = A@@;<== CA D @ D @< . A @1 ? C< @< C; < . < 9 C< - 1 ? A @ C< <= AD61=C . < 9 A A 1 A6 I< 1 <;? 1AB@ ;<G61<@ D G; 0 G =1 ? C< F I< 1 9 A P ;A ;@1 A; ==< . D6 C< @1= . 1==A6 9 C< 1 1= <;=A @ C< =B=G< i 9 C< - 1 ?3= AB C ;1 C<=< . <A=B;<= E<;< AGG; I<@ 9 A @ C< 01; @1= 1 1= <;= E<;< ;< <= AD

61=C<@' 1 ' G E<;' C<' B 9 ; B A <' B1=' : ' EA=' A>< ' ' C<' <. G6<' E1 C' C1=' 9A . 16 (' A @' C<' " C' <G < . D<;' EA=' AGG 1 <@' A=' C<' @A ' 9 ;' C<' G< 1 ?' 9' C<' ==< . D6 ' EC#FC' EA=' ' @<F1@<' C<' @<= 1 1<=' 9' C<' A 1

C<'< <. 3=' A; . ' F 1 B<@' ' AGG; AFC(' A @' C<;<' EA=' ;<A= ' ' 9<A; A' F1I16' EA;' A9A < <(' G;<9<;;1 ?' ' ;<=1? ' C1=' F . . A @' ' < ?A?1 ?' 1 =BFC' A' EA;(' 6<9 ' C1=' A; . ' A @' F; ==<@' C<' 9; 1<;' E1 C' (B;<AB' @<' +B= (A B; ABD . 3?(' A @' 6<PA @<;'@<' A . < C' (<1 ?' ;<F ? 1=<@' D ' C< B= ;1A ' B G = =(' C<' EA=' A;;<= <@(' A @' C<' . G<; ;' CA@' C1 . ' 91;= F 91 <@' A ' A?@<DB;?(' A @' C< ' A ' 6 . B M(' 1 ' @<91A F<' 9' C<' 6AE' 9 A 1 =' %B;1 ?' 9 B;' <A;=' 9' A' F;B<6' FAG 1I1 'C<' @1=G6A <@ C<' . =' D6<' F B;A?<' <' EA=' 99<;<@' C1=' 61D<; ' ' C<' F @1 1 ' 9' . A>1 ?' F<; A1 ' ;< ;AF A 1 =' N DB ' C<' ;< . A1 <@ 1 ' FCA1 =' ;A C<#;' CA ' @< ' C<' G;1 F1G6<=' ' C<' ;1B . GC' 9' EC1FC' C<' CA@ @<I <@' C1=' 9 ; B <' A @' C1=' 619<

' C<' " C' 9' B?B= ' C<' I1F ;1 B=' GA; ' G; F<<@<@' ' <= ADC=C' 1 =' G E<;' 1 ' +A;1=' D ' C<' . =' I1 6< ' . < C @=' ' CA@' A ' C<' = A B<=' 9' - 1 ?=' GB66<@' @ E (' AD 61=C<@' C<' @<GA; . < A6' @1;<F ; (' A @' AD 61=C<@' C<' F @1 1 =' @< . A @<@' D ' C<' 6AE' ' ;< @<;' A' . A ' A ' AF 1I<' F1 1M< ' 1 A66 (' 1 ' @< . A @<@' 9' C<' ==< . D6 ' C<' <= AD61=C . < ' 9' A ' <P ;A0 ;@1 A; ' ;1DB A6' 9 ;' C<' ;1A6' 9' C =<' EC .' 1 ' <; . <@' C<' F =G1;A ;=' 9' C<' " C' 9' B?B= ' 611=' ;1D1 . A6' EA=' <= AD61=C<@(' DB ' 1 =' G; 0 F<<@1 ?=' AGG<A;<@' ' @16A ; ' ' C<' <; ;1D6<' . . B <(' EC1FC' EA=' B @<;' C<' 1 96B< F<' 9' A;A (' +A 1=(' <;?< (' S . ;@<B16(' 66 @3 <;D 1=(' (166AB@ A;< <=(' A @' A661< (' A @' <=G<F1A66 ' B @<;' C<' F ; 6' 9' C<' 91<; ' A @' 9 ; . 1@AD6<' %A (' EC ' CA@' D<< ' ;<F< 6 ' AGG 1 <@' 1 1= <;' 9' SB= 1F<(' A @' EA=' =B; A . <@' C<' 1;AD<AB' 9' C<' G GB6AF<

C<' +;B==1A =(' =BGG ; <@' D ' C1; =1P' C B=A @' B= ;1A =' A @' < ' C B=A @' <==1A =(' C;<A < <@' C<' 9; 1<;' 9' C<' ; C(A @' :' C B=A @' ;< FC' <. 1?;A =(' 1 @<;' C<' F . . A @' 1 ! ' +G>I B?B=(' 9' C<' +;1 F<' 9' @W(' . A;FC<@' A?A1 =' ;A F<' 1 ' F F<; ' E1 C' C<. ' C<' A; . ' 9' <@A ' EA=' E1 C B ' A' FC1<9(' A @' C<' A@IA F<' 9' C<' < <. ' EA=' ;AG1@' ?E (D<1 ?' 1 I<= <@' D ' C<. (' FASh1 6A <@' N' <;@1 . ' EA=' D . DA;@<@' N A @' C< F<9 ; C' C<' ; A@' ' +A;1=' EA=' G< ' <;; ;' ;<1? <@' C; B?C B ' +A;1=(' A @' 1 ' EA=' A6;<A@ ' A' JB<= 1 ' E1 C' C<' P<FB 1I<' B F16' EC< C<;' 1 ' =C 1@@' ' ;< 1;<' D<C1 @' C<' 1;<' N %A ' . A1 A1 <@' E1 C' ? @' ;<A= ' CA ' +A;1=' 1=' ;A F<(' A @' CA ' C<' 0 I<;

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' X< ' GA;' 9' 61<' I1F 1 .=' C<;<' E<;<' @1=G6A <@' A6 . =' 1 B . <;AD6<' 1 = A F<=' 9' D6<' ;<=1? A 1 'A @' C<; 1F' @<I 1 (A @' ' C<' GA;' 9' C<' <P<FB 1 <;=' C<' . =' A ; F1 B=' AF =' 9' @<61;1 B=' F;B<6 ' >161B6' 1 ' C<' 1 I< 1 ' 9' . ;A6' ; B;<=' 9 ;' C =<' EC .' C<1;' CA @=' F B6@' ' ;<AFC(C< ' . A@<' C ;;1D6<' =A B; A61A' A; B @' C<' < . G6<(A @' @1=G6A <@' B @<;' C<' E1 @ E=' 9' CA ' A6' G;1= (1 ' C<' =1?C ' 9' C<' LB<< (C<' C<A@' 9' C<;' 9;1< @(C<' B 9 ; B A <'+;1 F<=' A . DA66<' C<' ==< . D6 ' E1=C<@' ' FC<F>' C<' . A==AF;<=(DB ' 9 I . @' 1 =<69' B AD6<' ' @ ' = ' C<' . A ;(+W 1 (EA=' =B=G< @<@' 9; .' C1=' 9B F 1 =' N C<3D< <;' F6A==' 9' F1 1M< =' ?; A <@' 1 ' <;; ;N' A @' C<' . . 11 <' ;<1? <@' A6 <' 1 ' +A;1=' C<=<' C ;;1D6<' =F< <=' @1@' 1 . . < =<' 1 KB; ' ' C<' FAB=<' 9' C<' - <I 6B 1 'N C<' FCA= 1=< . < ' 9' C< .' 9<66' A9 <;' A' 1 .' BG ' C<1;' 9<; F1 11=' AB C ;=(A @' A . ?=' C< .' EA=' G<;F<1I<@' E1 C' C ;; ;' C<' =G<F1A6' ?11A;@1A ' 9' KB= 1F<' A @' C<' 6AE=(C<' @< . A? ?B<' %A

C<' +;B==1A =' F 1 B<@' 'A@IA F<' %B . B;1<M(EC ' CA@' D<< ' AG0 G 1 <@' ' C<' F . . A @' 9' CW' A; . ' 9' Ç<' =<66<(C;<E Ê C1=' ; G=(D 'A ' 1 =G1;A 1 ' 9' ?< 1B=(1 ' C<' 9 ;<=' 9' ?M@?QA'<M@' <D+BD7$@V A$>+AA< $; AO' P Z ;? 4 <(C<' 'G =1 1 ' 1 'EC1FC' C<' F B6@' FC<F>' C< G; ?;<==' 9' C<' < < . (G = <@' C1=' G;1 F1GA6' 9 ;F<=' A ' 0 ;A @ +;W' A @' =6< <=(A @'E; <' ' C<' ==< . D6 '), ['' 'AEA1 ' C<' +;B==1A =' N C<' FA . G' 9' 0 ;A @ +;W' A @' CA ' 9' =6< <=' A;<' C<' C<; . G 6<=' 9'+;A F<'N DB ' '=CA66 D<' . ;<' 9 ; B A <' CA ' < 1@A=~' C<' +;B==1A =' E<;<(1 ' 9AF (F . 0 G<66<@' 'CA6 'N DB ' A ' <;; ;' F . . 1 <@' D ' %B . B;1<M' 9 ;F<@' C1 . ' ' ADA @ 'C1=' G =1 1 (A @' ' 9A66' DAF>' BG ' C<' FA . G' 9' A1 < < < ' C B6@(EC<;<' C<' F F< ;A <@' C1=' 9 ;F<=(A @' ;<F<1I<@' ;<1 9 ;F< . < =' B @<;' C<' F . . A @' 9' (<B; I166<' A @' - <66< A (EC1FC' ;A1=<@' C1=' A; . ' '=<I< ' C B=A @' . < ' ' C<' " C' <G < . D<;' C<' +;B==1A ' A; . 'A AF><@' - <66< A 'A ' A6 . (E1 C' C<' 1 < 1 ' 9' FB 1 ?' ' C<' ;< ;<A ' 9' C<' ;< FC' A; . (C<' EA;61><' YCY=# . ;'S A=G<F ' 9' EC1FC' <;;191<@' C<' %B><' 9' (;B =E1F>' C<' AF 1 'F =1= <@' 6 ' 1 'A' 61I<6 ' FA A@<' EC1FC' 6A= <@' 166' C<' <I< 1 ?(A @' C<' C B;' 9' C<' @A ' ;< . A1 <@' E1 C' C<' ;< FC' C1=' 91;= ' =BFF<==(A6 C B?C' 9' 61 6<' ;<A6' 1 . G ; A F<(< F B;A?<@' C<' ;< FC' A; . (# @' ?AI<' 1 'F 91@< F<' 1 ' 1 =<69'N EC16=' '1 'A= 1=C<@' C<' < < . ('EC .' C<' ;< FC' < . 1?;A =' CA@' @<F6A;<@' CA ' C<' FA . GA1? ' E B6@' D<' A' . <;<' . 161 A; ' G; . < A@<' C<' %B><' 9' (;B =E1F>' EA=' E1 C B ' . A?AM1 <=(C<' <A= ' EA=' D<?1 1 ?' DA@(A @' C<' 99<;<@' ' E1 C@;AE' 9; .' ;A F<

' ' ' ') ' : !>' ?' 8* -'

19' C<' ;< FC' E B6@' ';<G6AF<' C<' F =1 B 1 A6' -1 ?' BG ' C<' 3B; <' C<' P<FB 1I<' 1 . F16' ;<G61<@' CA ' 1 ' F B6@' ' 61= < '' ' A ' G; G =A6=' D<9 ;<' C<' +;B==1A ' ; G=' CA@' E1 C@;A#I ' 9; . ' ;< FC' = 16(' A @' C<' @37@><' B3'<M@' K#B><' 9' (;B =E1F>' 61< ' ;@<;<@'A';< ;<A (' EC1FC' EA=' D<?1 <G < . D<;' C<' ;< FC' ;<=B . <@'G ==<==1 ' 9' <;@B 'A @' ?E (' A @' C<' < < . ' ;<GA==<@' C<' C1 <' A ' D6< M' C<;' =BFF<==<=' A < @<@' C<' ;< FC' A; . =' 1 ' C<' F B;=<' 9' C1=' FA . GA1? ' B= 1 <(' ' C<' - C1 <(' >' G ==<==1 ' 9' ;sI<=(' G1;<(' A @' A < F<N' <=JB1<B' 1 IA@<@' AI (' A @' =<6 . <' C<' F B ' 9' 1F<' B;' A; . 1<=' <I<; EC<;<' A==B . <@' C<' 99< =1I<(' A @' E<;<' I1F ;1 B=

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UG #1 @ ! 2! & FG # @ ! 2!!ZFG #? !Y 9 [

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*+ <?1=6A 1I< ==< . D6 CA@ @1== 6I<@1 =<69& A @ CA EC1FC=BFF<<@<@
1 F . . < F<@1 = =1 1 ?= C< " C 9<G < . D<;& 2! & A @ G< 1 ? 9C<
> C< A . < 9 C< A 1 A6 I< 1 = =91;= AF EA=
AD 61=C A6 & A @ G; F6A1 . A <GBD61F A @ 1 C<
@<F6A;<@ CA 1 I B6@ @A < 1 = G; F<<@1 ?= 9; . Q C< 91;= <A; 9
C< ;< FC <GBD61F C<=< . <A=B;<= E<;< @<F;<<@ B A 10
. B=6 & DB 61< E =<F 1 = 1 EC1FC 61< <?1=6A 1I< G#; F .<@9= C
==< . D6 EA= @1I1@<@ A 1 = F6 =<& =G<<@16 F . . < F<@ A 2 AF1 =
@<=G<;A < EA; A?A1 = <AFC C<;& C< 1==B< 9 EC1FC IA=&
9A A6 D C 9 C< . C<=< GA; 1<= 1I<;< CA 9 C< 01; @1= =& EC1FC
=A C< ;1?C 1 C< ==< . D6 & A @ CA 9 C< B A1 & IC1FC FFB0
G1<@ C< BGG<; D< FC<= C<6<9 & 9; . EC< F< C< @<;1I<@ C<1; A . <
C< 91;= GA; @<=1;<@A6<?A6A @F = 1 B 1 A69 ; . 9? I<; . < 1 C<
<GBD61F& EC1FC EA= C< DK<F 9 C<1; 1I1=C<=& A @ IC1FC C< CA@

8"

<' A <. G <@' 'KB= 19 ' C1 . =<69' 1=' AGG<A;A F<' A ' C<' ;1DB <' <PF1 <@' A' 9<<61 ?' 9'C ;; ;N A @' EC< ' C1=' A ; F1 B=' . A (;<. A1 1 ?' G<;9<F 6 ' . I<@(=A1@([' ' CAI<' A' ?;<A ' 11 . D<;' 9' G<;= A6' < <. 1<=' 1 ' C1=' ==< . D6 (N' C<;<' EA=' A' ?< <;A6'F; ' 9'[66' ' A66z N'A @' < ' C1=' A AF>' BG ' C1 . ' CA@' ' ;<=B6 ' ' EA=' ;<=B . <@' = . <' @A =' 6A <;' A?A1 =' D<=G1<;;<' [' ' <(N' C<' =A1@([' E166' @A;<' ' AFFB=<' . <' ' . ' 9AF<N' [' <=N ' @ ' N' F;1<@' BI< N' A @';1 . 1 ?' ' C<' ;1DB <(C<' I<;EC<6 . <@' D<=G1<;;<' D ' A' . =' <6 JB< ' A @' 1 . G; I1=<@' @< B F1A 1 (G;<9AF1 ?' <AFC' <E' 5=<;1<=' 9'AFFB=A 1 =' D ' C<' <;;1D6<' 9 ; . B6A([' D<=G1#<(' AFFB=<' Bz N' C<' 9B B;<' ;A ' E B6@' CAI<' QD<< ' F;B=C<@' ' C1=' FFA=1 (DB ' C<' @< . A @<@' A @' D A1 <@' A' E<<>'9 ;' C<' G;<GA;A 1 ' 9'C1=' @<9< F<(A @' C<' ;@<;' 9' C<' @A ' GB ' A ' < @' ' C<' = ;B??6<' ' EA=' CB=' CA ' C<' O1; 0 @1= =(D ' C<1;' A AF>=(C< . =<6I<=' 1 F;<A=<@' C<' 1 . G ; A F<' 9' C<1;' A@I<;=A;1<=N 9A961 ?' ' G<;F<1I<' CA ' C< ' . B=' IA JB1=C' A @' F;B=C' C< . (;' G<;1=C' C< . =<6I<=' + E<;6<==' A?A1 =' C<' . . B <(C< ' 1<6@<@' A6= ' ' C<1;' < <. 1<=' C<' 6BD' 9' C<' SAF D1 =(A @' 1;;1 A <@' C<' G GB6AF<' 9' +A;1=' D ' @<. A @1 ?' CA ' C<' G; <F 1 ' 9' C<K' ==< . D6 '=C B6@' D<' F 91@<@' ' ; G=' @;AE ' 9; . (C<' @<GA; . < =' +; .' C< F<' C< ' D A1 <@' C<' A . <' 9' <@<;A61= =(A @' E<;<' AFFB=<@' 9'E1=C1 ?' ' <PF1 <' C<' G; I1 F<=' A?A1 =' C<' FAG1 A6(EC16=' C<' B A1 ' CA@' G; F6A1 . <@' C<' 1 . 1 ' A @' 1 @1 I1=1D161 ' 9' C<' <GBD61F

C<' ;< FC' A; . =' ;1B . GC<@' 1 ' (<6?1B . ' 0< <;A6' 6A1;9A1 ' CA@' K 1 <@' C<' ;FC@B><' 6D<; ' D<9 ;<' =(A @' C<1;' . 1 <@' I1 1 9%B ' A; . 1<=' F I<;<@' C<' C<1?C =' ' EC1FC' A;<' A BA <@' C<' I166A?<=' 9' S<. AGG<=(B<=. <=(A @' (<;6A1 . ' C<' I<. D<;(1q ' G =1 1 ' 9' C<' B=;1A =# @<9< @<@' D ' B . <; B=' @ !' = <<G' =6 G<=(E @=(9 B; << ';<@ BD =(A @' A' G E<;9B6' A; 166<; (=<< . <@' 1 . G;<? AD6<' C<1;' FAIA6; (G = <@' 1 ' C<' C 66 E' D< E<< ' C<' C166=(<=G<F1A66 ' D< E<< ' S<. AGG<=' A @' B<=. <=(C<6@' 1 =<69' 1 ';<A@1 <=' '=E<<G' AEA ' B;'F 6B . =' A=' = ' A=' C<' A; 166<; '=C B6@' CAI<' D; >< ' C<. ' %B . B;1<M' @;<E' BG' C1=' A; . '1 ' A' =<. 1F1;F6<' GA;A66<6' ' CA ' 9' C<' < <. N' A @' C<' O< <;A6=' <;;A @' A @' (<B; I166<' F . . < F<@' C<' 'A AF>' A ' 61<' E1 ?=' C<' +;< FC' 6<9 ' @; I<' DAF>' C<' < <. (A @' %B . B;1<M' C< ' 1 . . <@1A <6 ' >77$@C' C<' F< ;<' A?A1 =' S<. AGG<=' 1=' 1 9A ; ' A@IA F<@' 1 ' F6 =<' F 6B . =' 1 . @<;' A' . B;@<; B=' 91;<' N' DB ' C< ' C<' B= ;1A ' FAIA6; 'A@IA F<@(A @' A ' C1=' . I<. < ' A' ;< FC' D;1?A@<' ?AI<' EA (A @' 6A1@' G< ' C<' 96A >' 9' B;' F 6B . =' ' C<' ;1?C ' C<' A AF>' EA=' ' C<' G 1 ' 9' 9A16

1 ?' EC< ' B ?' (AG 1= <' < A;@ =1 . G6 ' A' =<; I A ' ' %B . GB;1<M CA= < <@' 'G 1 ' B ' C<' @A ?<; A @' 6<@' DAF>' C<' D;1?A@<' A?A1 =' C<' < < . ' C<' A6A; . ' CA@' A6;<A@ ' =G;<A@' ' C<' A AF>1 ?' DA A61 ' 9' C<' F< ;< A @' C< ' E<;<' =CA>< ' D ' C<' 91;<' '9; . ' C<' DA <;1<=' (B ' C<' %B>' @<' CA; ;<= C<' <6@<= ' = ' 9' C<' %B><' 9' ;6<A =; A661<@' C< . ?A C<;<@' A' D @ ' 9' G1F><@' ; G=' A; B @' C1 . ' A @' ;<=B . <@' C<' F 961F ' %B . B;1<M' CA= < <@' ' C<' ;1?C ' A ' C<' . . < ' EC< ' C<' 1 ;<G1@' %A . ' G1<; ;<EA=' 6<AG1 ?' 1 'A '< < . 3=' ;<@ BD ' <' A==< . D6<@'= . <' =FA <;<@' DA A61 =; ;<GB6=<@' C<' < < . 3=' FA I A6; A @' FCA 1 ?' C<' [' A;=<166A1=<' A ' C<' C<A@' 9' C1=' DA A61 =& C;<E' C1 . =<69' BG ' C<' B= ;1A ' < ;< @1

B+aD@A<' B3' 9 ;F<@' C< . A @' >' C<' I166A?<' 9' B<= . <=' C<

@# $D ; ' DA 6<' EA=' E' E 'N C<' B= ;1A =' E<;<' @;1I< ' D< @' C<'

<;' A @' C<' I1F ;1 B=' ?< <;A6< <;<@' (;B==<6=' ' C<' C EC16=' C1=' 61<B < A =' >' A . B;'A @' E<;G' C<' EC 6<' 9' (<6?1B . ' EA=' =BD@B<@

; . ' C1=' 1 . <' D<?A ' C<' @1==< =1 =' D< E<< ' C<' I1F ;1 B=' %B . B;1<M' A @' C<' SAF D1 =' C<' 6A <;' C;<E' C< . =<6I<=' BG ' C<' F JB<;<@' G; I1 F<=' A=' C<1;' G;< ' C<' 6< . 1 ?=' E<A; ' 9' C<' B= ;1A ' ><' CA@' ;<F<1I<@' C<' ;< FC' E1 C' < CB=1A= . ' A @' A=' 61D<;A ;=' (B ' C<' SAF D1 =' =G<<@16 ' A61< A <@' C< . ' D ' @< . A @1 ?' C<AI ' F ;1DB 1 =' A @' ?AI<' C< . ' BG' ' A' 9;1?C 9B6' A A;FC ' %B . B;1<M' 1 @1? A ' ;< B; <@' ' +A;1=' E1 C' C<' @ BD6<' DK<F ' 9' ;<G;<==1 ?' C<1;' I1 6< F<' A @' =AI1 ?' B1=' : 'N DB ' C1=' <91D; =' E<;<' IA1

C<' B 9 ; 1 . A <' A;FC' 6A ?B1=C<@' @B;1 ?' 9 . ;' . C=' 1 ' C<' 1;<;' 9' C<' < . G6<' E1 C' C<' LB<< ' C1=' E ' FC16@;< ' A @' C1=' I1; B B=' =1= <;' 61MAD< C'N GA==1 ?' C1=' 1 . <' 1 ' ;<A@1 ?' A @' C<' <@BFA 1 ' 9' C<' B ?' %ABGC1 ' C<' . . B <' <P<;F1=<@' A' F;B<6' =B; I<166A F<' I<;' 1 =' FAG 1I<=' A @' . A@<' C< . ' @;1 >' @<<G' 9' D1 <; <==' C<' @<DA <' ' C<' - 1 ?3=' ;1A6' F . . < F<@' ' C<' 8;@' I< . D<;' C<' G;1 F1GA6' FCA;?<=' A?A1 =' C1 . ' E<;<' 9 B @<@' ' C<' @ FB . < =' 9 B @' 1 ' C<' B16<;1<=' 1 ' A '1; 'FC<= ' C<' =<F;<' 9' EC1FC' CA@' D<< 'G 1 <@' B ' ' C<' 1 1= <;' 6A @' (' . <A =' 9' C<=<' E<;<' @1=F I<;<@' C<' F 1 . <; G6 =' 9' 61K=' B; ' A?A1 =' C<' <I 6B 1 ' A=' E<66' A=' C<' A;;A ?< . < =' . A@<' E1 C' 1;AD<AB' A @' O< <;A6' (B166W' C<;' GAG<;=' 9 1 . @' 1 ' C<' 991F<=' 9' C<' F1I 16' 61= ' =<< . <@' ' G; I<' CA ' B1=' CA@' ' A6EA =' D<< ' A' = ;A ?<;' ' C<' <99 ; =' . A@<' D ' B; G<' 1 ' C1=' 9AI B;' (B ' A=' - 1 ?' C<' = 1 B 1 ' @<F6A;<@' C1 . ' 1 I1 6AD6<'N . ;< I<;' C<' EA=' @< C; <@' A @' F B6@' 'D<' F @< . <@' =AI<' 1 ' @<91A F<' 9' A66' C<' G;1 F1G6<=' 9' 6AE' 9 ;

AF A'FG . . 1 <@'D<9 ;<'C1='@< C; < . < ' C<' B A1 ' C< . =<6I<='G<;0 F<1I<@' C<'166<?A61 ' 9' C<'G; F<<@1 ?='@1;<F <@'A?A1 = 'C1 . ' D<=G1<;;<' 1 '@< . A @1 ?'C1='@<A C' ;<K<F <@'A66'9 ; . =' 9'6AE' A='166B=1 =' A @'E1 C' 'SB=' ;<61<@'= 6<6 ' ';<A= ='9'G 61F ' ['CA'E B6@' ' C<'? @' F1 1M< =' C<'9;1< @='9'61D<; ' =A1@' C<'6A <;' [' CAI<' 9<A;' 19' C<' =AE' C<'AP<'9<;< . D61 ?'1 ' B;'CA @='A @'A'G< G6<' ' C<'91;='@A ' 9'1 ='61D<;9 ' ;<=G<F 1 ?' C<' . < . ; ' 9'1 ='FCA1 =z`

C<' B A1 ' 1;?1 ?'E1 C' C<'B . ='< <;? ' C<'F @< . A 1 ' 9' C<' -1 ?' E1=C<@' ' F;B=C' C<'01; @1= =' EC ' CA@' G< 6 '<PG;<==<@' C<1;' @<=1;<' ' =AI<' C1 . ' C<'?;<A ' . AK ;1 ' 9' C<' ==< . D6 'G<;A= <@'1 F @BF 1 ?' C1='?;<A ' ;1A6'AFF ;@1 ?' 'KB@1F1A6'9 ; . A'Y' A @' B1=' : ' A6;<A@ ' =<GA1'A <@'91; .' C1='9A . 16 ' AGG<A;<@' A='A' G;1= <;' D<9 ;<' C<' I< 1 ' EC =<'KB;1=@1F 1 'C<'@1@' '@< ' 1='D<A;' 9' B1= 1 ?' EA='91; .' A @' D6<' C1=';<G61<='G;<F1=<' BFC1 ?' A @' A6 . =' A6EA =' I1F ;1 B=' ' D<1 ?' ;<F @BF <@' ' C<' < . G6<' C<' ;<JB<= <@' 'D<'A66 E<@'F B =<6' A @' A . <@' A;?<' A @' ; FC< ' C<' 91;=' @<F61 <@' 'AF ' DB ' C<' I< <;AD6<' A6<=C<;D<A' 99<;<@' ' A><' C1='G6AF<' A @' E; <' ' C<' I< 1 ' C<=<' . < . ;AD6<'E ;@=') [' CAI<' D<< ' E1F<'=B . . <@' ' C<'F B F16=' 9'C1 . 'EC ' EA='. ' . A= <;'1 ' C<' 1 . <=' EC< ' 'D<'= 'EA='A ' DK<F ' 9' A . D1 1 ' ' A66' C<' E 1'6@N A @' ' E<'C1 . ' C<'=A . <'=<; I1F<'EC< '1 '1='A ' 991F<'EC1FC' . ='G<;< =' E B6@' F =1@<;' @A ?<; BA`' C<' I< 1 ' ?;A <@'C1=' ;<JB<= ' D ' EC1FC' B1=' : 'EA='@<<G6 ' BFC<@N'EC< ' C<' =AE'C1 . ' C<' G;<==<@' C1 . ' 1 ' C1='A; . =' A @' =A1@'E1 C' <A;=' 1 ' C1=' < <=' [' B' A;<' ;1=>1 ?' B;' E ' 619<' A @' E166' ' =AI<' . 1 < `' A6<=C<;D<=' C 6@1 ?' C<' -1 ?3=' CA @' G;<==<@' 'C1=' CG=' =A1@' CA 'C<'EA='CAGG ' CB=' 'D<= E' C<' ;< . A1 @<;' 9' C1=' @A =' <' C< ' < @<AI B;<@' '1 =G1;<' C<' AB?B=' FAG 1I<'E1 C' C G<'1 ' C<'KB= 1F<' 9' C1='KB@?<=' A @' C<' F 9B=1 ' 9' C1='G<;=<FB ;=N ['z' 'z`';<G61<@' C<' 1 ?' ['C< 'E166' >166' . <' 'A . ' =1B<N 61< 'CAI<' 'D C' C<'G E<;'A @' C<'E1 N' DB ' <I<;' . 1 @' 6< 'B=' F =1@<;' C<' =BDK<F ' 9' . '@<9< F<' A=' 61 B?C' 1 'E<;<' F<; A1 ' ' D<' =BFF<==9B6 , #A @1 '9AF '1 ' 1I1L' D<4=BFF<==9B6' =1 F<'1 'E166' 6<AI<' . 'FCA;AF <;'E1 C B 'A' = A1 `

; FC<' A @' A6<=C<;D<=' 1 . . <@1A <6 'F . . < F<@' C<'G;<GA;A 1 ' 9' C<' -1 ?3='@<9< F<' A @' >' F B =<6'E1 C'%<=<M<' A 'A@I FA <' 9' (;@<ABP' <= AD61=C<@'1 ' +A;1=

1 F<' C<' F . . < F<. < ' 9' C1=' ;1A6' B1=' : ' =<GA;A <@' 9; .' C1='9A . 16 'D ' C<' ;@<;=' 9' C<' I< 1 ' A @' ><G 'A'F6 =<' G;1= <;' EA=

8 ' ' '&# ' ' $$- ' : !>' '8* -'

' AD6<' 'F . . B 1FA<' E1 C' A ' 9' C =<' EC ' E<;<' = ' @<A;' G' C1 . ' C<1;' =B99<;1 ?=&' C<1;' G<;16=&' A @' C<1;' 6 I<' E<;<' <I<;' G;<=< ' ' C1=' C 1P?C =' ' C<' ! C' %<F< . D<;' C<' =A1@&' A 'D;<A>9A=' 1 . <&' ' *; &' C1=' =1 ?6<' =<; IA &' 1 ' C<' G;<=< F<' 9' C<'9 B;' . B 1F1GA6' ?BA;@=&' [' B; << ' <A;=' A? ' B' E<;<' <A;C<;' CA ' B' A;<' @A `' '=A@' = . 16<' ;<I<A6<@' ' 6#; ' C<' . <A 1 ?' 9' C<=<' E ;@=&' [' ' 1=' C<' @A &`' F 1 B<@' C<' - 1 ?&' [' ' EC1FC' . ' @AB?C <;' EA=' D ; ' @' ' C1 >' CA ' '=C B6@' 'D<' AD6<' '=<<' C<;' `' <A;=' 9166<@' C1=' < <=' C<' . B 1F1GA6' ?BA;@=' =<< . <@' =16< 6 ' ';<=G<F ' C1=' ;< . < . D;A F<' 9' CAGG ' @A =' EC1FC' < <;<@' C1=' G;1= 'DB ' ';< @<;'1 ' . ;<' = . D;<

' C<' 9 66 E1 ?' @A ' B1=' : ' E; <' C1=' E1 &' C<' =BD61 . <' <= A . < ' 9' A' C;1= 1A ' = B6' ;<A@ ' 'AGG<A;' D<9 ;<' 1 =' 0 @' <' 6<9 ' C1=' ?;A <9B6' ;< . < . D;A F<=' 'C1=' A < @A =&' C1=' GA;@ ' 'C1=' < < . 1<=' [' 'GA;@ &`' C<' =A1@' 1 ' 1 &' ['I@ C' A66' . 'C<A;' C =<' EC ' CAI<' D<F . <' . ' < < . 1<=' E1 C B ' . ' CAI1 ?' ?1I<' A 'FAB=<' 'D<' = &' A @' 'G;A ' 0 @' 'GA;@ ' C< . &' A=' E<66' A=' C =<' EC ' 9; . 'A' . 1= A>< ' M<A6' CAI<K' @ <' . <' = ' . BFC' CA; . ' 'D<=<<FC' 1 . ' '6 >' E1 C' F . GA==1 A <' < <=' ' . 'E19<&' . ' FC16@;< &' A @' . ' =1= <;&' EC ' CAI<' = '6 ?' =I 99<;<@' E1 C' . <&' A @' '=BG0 G ;' C< . ' D ' 1=' ?;AF<' 19' C< ' =C B6@' 6 =<' . <&' = ' 6 ?' A=' C< ' =CA66' ;< . A1 '1 ' C1=' G<;1=CAD6<' E ;6@' ' ';<F . . < @' ' . ' = &' 19' C<' =C B6@' <I<;' CAI<' C<' . 1=9 ; B <' 'D<F . <' A' - 1 ?&' ';< . < . D<;' CA 'C<' B?C ' '@<I <' C1 . =<69' < 1;<6 ' ' C<' E<69A;<&' 9' C1=' F F1 1M< =&' CA 'C<' B?C ' ' DA 1=C' 9; . ' C1=' . 1 @' <I<; ' 9<<61 ?' 9' CA ;<@' ;' ;<=< . < &' A#@' <=G<F1A66 ' ' @ ' =G' E1 C' ;<=G<F ' ' A ' . 1=<;1<=' . A ' . =<69' CAI<' =B99<;<@' ' F F6B@<' D '@<F6A;1 ?' D<9 ;<' 0 @&' A @' A=' ;<A@ ' ' AGG<A;' D<9 ;<' 1 . &' CA ' '@ ' ';<G; AFC' . =<69' E1 C' A ' 9' C<' F;1 . <=' 6A1@' ' . ' FCA;?< `

C<' - 1 ?' EA=' A><' 'A' =<F @' 1 . <' D<9 ;<' C<' I< 1 &' A @' AGG<A;<@' A ' C<' DA;' AFF . GA 1<@' D 'C1=' F B =<6' %<=9<M<' ;<A@' C<' @<9< F<&' A @' F F6B@<@' C1=' GA C< 1F' A@@;<=='E1 C' C<=<' = 6< . 'A @' ;B<'E ;@=' [' B1=&' A=F< @1 ?' A' C; <' A ' C<' A?<' 9' E< ' <A;=&' =A ' C<;<' A ' <PA . G6<' 1' . ;A6=&' KB= 1F<&' A @' <F . ' '_ <' FA;;1<@' '1 ' 'E<A> <==&' ' F ;;BG ' GA==1 &' A @' EA=' C<' F = A ' 9;1< @' 9' C<' G< G6<' C<' G< G6<' E1=C<@' CA 'A' @1=A= ; B=' AP' =C B6@' D<' AD 61=C<@&' A @' B1=' AD C=C<@' 1 '1' C<' G< G6<' @<=1;<@' C<' AD 61 1 ' 9' =<; I1 B@<&' A @' B1=' AD 61=C<@' 1 N' C<' G< G6<' = 61F1 <@';<9 ; . =&' A @' C<' . A@<' C< . 'N C<' G< G6<' E1=C<@' 'FCA ?<' 1 =' 6AE=&' A @' C<' F =< <@' ' C<' FCA ?<N C<' G< G6<' E1=C<@' CA ' . 1661 =

9' ;< G61 . < ' =C B6@' ;<F I<; C<1;' ;1?C =(' A @' C<' ;<= ;<@' C< . N' C<' G< G6<' I1=C<@' 9 ;' 61D<; (' A @' C<' D<= E<@' 1 ' ' C< . ' '1=' 1 . G ==1D6<' ' @< ' ' B1=' C<' ?6 ; ' 9' CAI1 ?' A 1F1GA <@' C<' E1=C<=' 9' C<' G< G6<' D C1=' =AF;191F<=N A @' 1 ' 1=' C<' CA ' 1 ' 1=' G; G =<@' ' B' (B (' F1 1M< =(' E 166' ' F . G6< <' ECA ' ' EA=' AD B ' '=A ' ' GAB=<' 1 ' C<' G;<=< F<' 9' C1= ; ' -< . < . D<;' CA ' 1 ' E 166' KB@?<' B;' KB@? . < (' A @' CA ' 1 =' I<;0 @1F ' E 166' D<' CA ' 9' A66' A?<=' ' F . < `

B1=' : (' 6<9 ' C<' CA ' E1 C' C1=' F B =<6(' A @' A' I1 6< ' = ; . ' 1 . . <0 @1A <6 ' A; =<' 1 ' C<' ==< . D6 ' A KB1 A1=(' 1 ' A' = A <' 9' ?;<A ' 1 @1? A 1 (' ;B=C<@' ' C<' ;1DB <(' PA @' @< . A @<@' CA ' C<' EC 6<' G; F<<@1 ?=' =C B6@' D<' A B66<@' ' <PF6A1 . <@' CA ' C<' 1 . <' 9 ;' 9<; F1 B=' . < ' CA@' ? <' D N CA ' ' . A><' C<' ==< . D6 ' ; ' B1=' : ' EA=' '@1=C B;' 1 N' CA ' ' <' 1 ' ;A F<' CA@' C<' ;1?C ' '@ ' = N' CA ' 19' C<' ==< . D6 ' @<=1;<@' ' AF ' A=' A' G 61 1FA6' D @ ' 1 ' =C B6@' 6 ' A><' . <A=B;<=' 9' G;<FAB 1 ' A?A1 =' C<' 6A <' - 1 ?N A @' CA ' 19' 1 ' E<;<' ' AF ' A=' C1=' ;1DB A6' 1 ' E B6@' @ ' = ' 1 ' @1=;<?A;@' 9' A66' G;1 F1G6<=(' 9 ;' 1 ' CA ' FA=<' C<' IA JB1=C<@' E B6@' D<' KB@?<@' D ' C<' IA JB1=C<;(' =1 F<' . =' 9' C<' . < . D<;' =' G;<=< ' E<;<' C<' @<F6A;<@' F =G1;A ;=' 9' C<' " C' B?B= ' C<=<' E ;@=' E<;<' 9 66 E<@' D ' A' <; ;1D6<' B . B6 (' A @' 9; . ' A66' =1@<=' A; =<' C<' F; (' [' ;@<;' ' ' C<' DDA <' E1 C' C1 . z`' A KB1 A1=(' FA6 . ' A @' 1 ;<G1@(' A@@<@(' [' ' E B6@' ;A C<;' @1<' A' C B=A @' @<A C=' CA ' F @< . (' F ;A; ' ' 6AE(' C<' . =' AD . 1 AD6<' ;A `' ' F; E@' 9' =G<A><;' =BFF<<@<@' A KB1 A1=' A1 ' SB=' 1 96B< F<@' C<' CA ;<@' 9' C<' B 9 ; B A <' +;1 F<3=' < < . 1<=' D ' ;<0 G;<=< 1 ?' C1 . (' E1 C' A ' A1;' 9' C G F;1 1FA6' ?< 6< <==(' 1 . @<;' C<' . =' AD . 1 AD6<' F 6 B;=' - ADAB@ A1 1< <(' A' + ; <= A ' . 1 1= <;' EC ' CA@' A6;<A@ ' C B;AD6 ' @1= 1 ?B1=C<@' C1 . =<69' A=' A' . < . D<;' 9' C<' 0 = 1 B< ' ==< . D6 (' <PG;<==<@' C1 . =<69(' C<' C<;' CA @(' A=' 1 @1? A ' A ' C<' AFFB . B6A 1 ' 9' G E<;=' <P<;F1=<@' D ' C<' I< 1 ' [=' 9 ;' . =<69(`' C<' =A1@([6A . ' E<A; ' 9' . '=CA;<' 1 ' @<=G 1= . N ' A . ' ; . < <@' #' C<' 1@<A' 9' C<' ;A ' 9' EC1FC' '9 ; . ' A' G ; 1 (' A @' '=1?C' 9 ;' C<' . . < ' EC< ' B' =CA66' CAI<' <= AD61=C<@' A' ;1DB A6' EC1FC' =CA66' ;<61<I<' . <' 9' C<' AGG<A;A F<' 9' D<1 ?' A' ;A ' 9' B' =<<>' 9 ;' G 61 1FA6' ;<A0 = =(' C< ' A;<' ' D<' 9 B @' 1 ' C1= ; ' C<' F1 1M< =' 9' @ (' A9 <;' CAI1 ?' = ' <A; <= 6 '= B?C ' 9 ;' C<' GB 1=C . < ' 9' C<1;' - 1 ?(' E<;<' C<' 91;=' ' FB;=<' C1=' KB@?<=' A @' ' G; = ;A <' C< . =<6I<=' D<9 ;<' C1=' =BF0 F<== ;' +< G6<' 9' +A;1=(' +A;61A . < ' 9' +A;1=(' CAI<' B' C<A;@' ECA ' ' CAI<' =A1@' c`' B < ' D<=G1<; ;<' C< ' A; =<' A @' =A1@(' E1 C' A ' AFF< ' 9

CA @=F B6@ E1G< AEA ' B;' <A;=' A @ =BFF B;' B;' @<=GA1;1 ?' 9A . 161<='c
B6@ B' C< ' ? ' ' C =< 9A6=< < @=% C =< G<;91@1 B= 96A <;<;= EC '
CA@ FA=' B' 1 ' C< AD ==c' @ 19' B' @1@% ECA ' E B6@ D< C<1;'
;<G6 'c 9 B' A=><@ 9 C< . ' D;<A@ C< ' E 116@ =A % R O ' ' C< JBA;;1<='
' @1=GB < E1 C C< <A; C = . < ?A ' 9;A? . < = 9 C< ;1F 1 . = EC . ' B'
CAI< =6A1 K3 ;' E166 B' CAI< D6 @'c << C<;<% A>< 1 ' (6 @' A @
@<A@ D @1<='N E< CAI< ' C<;' B;1=C . < ' ' 96<;' B' z3 `
C< 1 . G;<==1 ' G; @BF<@ D ' C1=' @1=F B;=< EA=' G; 9 B @% A @ C<
==< . D6 % @1I1@<@ 1 ' E ' GA; 1<=% C<=1 A <@ ' (;1== % O< = W% +W 1 %
A@I1=<@ A ' AGG<A6 ' CW G< G6<N (A;;];< GG =<@ C1=' F B;=<% A @ C1='
FA 61>< FB 1 ?% C1='F 6@ A @ F;B<6 6 ?1F% ;1B . GC<@ I<;' C< <6 JB< F<
9 <;? 1AB@' C< F F6B=1 ' 9 C< @1=FB==1 ' EA=' @<F6A;<@% A @ A'
@<F;<< 91P<@ C< . 1 A6 I < 9 ;' C< @ C 9 SA BA; ' C;<< JB<= 1 =
E<;< C< '=BD . 1 <@ ' C< @<F1=1 ' 9 C< ==< . D6 '\(* A=' C< - 1 ?'
?B16 'c C B6@ C<;< D< A ' AGG<A6 ' C< G< G6<c @ 19' ?B16 %
ECA ' =C B6@ D< 61< - 1 ?3=' G; . 1=C . < c` C< ==< . D6 ' EA=' D61 @<@
D ' GA==1 % A @ 1 . G6AFAD6<% A @ B1=' EA=' ; . AB1 . B=6 ' @<F6A;<@ ?B16 '
C< AGG<A6 ' C< G< G6< EA=' ;<K<F <@% A @ 1 ' ;< . A1 <@ ' @< <; . 1 <
ECA ' GB 1=C . < ' B1=' =C B6@ =B99<;' C< <PF1 < . < ' EA=' A ' 1 =' C<1?C '
1 ' +A;1=% A @ A' 9B;1 B=' . B6 1 B@<% F 66<F <@' A ' C< @ ;=' 9 C< ==< . D6 %
CB;6<@ <;;1D6< . < AF<=' A?A1 =' C@=< EC ' E<;< 1 F61 <@ ' F6< . < F ' '
6A;?< B . D<;' 9 C< @<GB 1<=' AGG<A;<@ ' D< 1 1 . 1@A <@% A @ <;? 1AB@'
C1 . =<69% EC ' G;<=1@<@% 6 =' C< F B;A?< EC1FC C< CA@ @1=G6A <@' @B;1 ?'
C< G;<F<@1 ?' @A =% A @ 1 ' A' F EA;@6 ' . A <;' @<F6A;<@' 9 ;' @<A C' '
6< ? C% A9 <;' 9 ; 'C B;=' 9 A' . 1 A6 F 66<F 1 ' 9 I <=% C< @<F6A;<@'
C< ;<=B6 ' 9 C< @1I1=1 ' 9 =<I< 'CI . @;<@' A @ < I <;=% C< =< 0
< F< 9'% @<A C EA=' G; B F<@% D ' A' . AK ;1 ' 9 E< =1P ' C<
F B =<6 9 B1=' : % %<=<M< A @ ; FC< % G; <= <@ A?A1 =' C<
@<F;<< N A6<=C<;D<= < @<AI B;<@ ' =G<A>% DB ' = D=' FC ><@ C1=' I 1F<'
' . 1 ' 9 ;' ;<G;1<IA6 A @ @<6A ' EA=' <?A 1I<@ E ' @A =' 6A <;' D ' A'
. AK ;1 ' 9 C;<< C1 . @;<@' A @ 1 < ' A?A1 =' C;<< C1 . @;<@' A @ < %
A @ C< <P<FB 1 ' EA=' 91P<@' 9 ;' C< =' 9 SA BA;
B1=' CA@ ;<JB<= <@ C< =<; I1F<=' 9 A' G;1<= % A @ CA@ A . <@ C< DDW
@?<E ; C' &@< 1; . ' C< ;<JB<=' EA=' ?;A <@' ' @?<E ; C' G; 0
F<<@<@' ' C< < . G6<% A @ A=' = ' A=' C< =AE' C< - 1 ?% 61;<E' C1 . =<69' A '
C1=' 9<< ' B1=' ;A1=<@' C1 . ' A @ F6A=G<@' C1 . ' 1 ' C1=' A; . =' ' 6A=' 1 <;0
I1<E' E1 C' C1=' 9 . 16 ' CA@' D<< ' G<; . 1 <@ ' 61< B 9 ; B A < +;1 F<N A @

C< . B 1F1GA6 991F<;=& B E1661 ?' ' 6 =< =1?C ' 9' C1 . ' 9 ;' A ' 1 = A & @< <; . 1 <@' CA ' C< 1 <; I1<E' =C B6@' A>< G6AF< 1 ' A' ; . ' ' EC1FC EA=' A' ?6A==' @ ;& C; B?C' EC1FC' <I<; C1 ?' F 1@@' D< =<< ' CA ' > G6AF< E1 C1 ' ' <1?C ' 3F6 F>' B1=' < <;<@' C1=' ; . & A @' 9 ;

1 #;I!PP[
B3' BD$A' "
S$<M' M$A'3> ; $#K '

= . < 1 . < EA6><@' BG' A @' @ E & A P1 B=6 ' <PG<F 1 ?' C< A; ;1I A6 9' C =< EC ' E<;< = ' @<A;' ' C1 . ' ' CA69 GA= <1?C ' C< @ ;' G< <@& A @' C< L B<< 'AGG<A;<@& 6<A@1 ?' C< %ABGC1 ' D ' C< CA @'N C1=' @AB?C <;' A @' A@A . < 61MAD< C' 9 66 E<@'N A @' A66' 9 B;' C;<E' C< . =<6I <=' =1 . B6 A < B=6 ' 1 ' C< - 1 ?3=' A; . =& E1 C' C< . = 'D1 <;' = D=' 9 <;' A' 6 ?' A @' GA1 9B6' 1 <; I1<'E& C< - 1 ?' ; =< A @' GB ' A ' < @' ' C1=' F; B<6' =F< <' D ' G; . 1=1 ?' ' =<< C1=' 9< . ' ' C< . ;; E ' ' =G1 < 9' C1=' G; . 1=<& EC1FC' F B6@' 'D< 9B69166<@& C< 9A;<E<66=' F =1= <@' 6 ' 9' = D=' A @' 6A . < A 1 =' B1=' : ' ;< C1 . =<69' A ' 6< ? C' 9; .' C<=<' A? 1M1 ?' < . 1 =& A @' 1 ' C< F . GA ' 9' DDW' @?<E ; C' 9 B @' ;<=1? A 1 ' A @' FA6 . ' ! 3 ' 6 ' C B?C ' E' EA=' C E' D<= ' ' G;<GA;<' C1 . =<69' 9 ;' @<A C ' D B ' . 1@ 1?C 'C< E< ' ' D<@' A @' =6<G ' 6W; & C1=' = 6< A @' C11 C9;16' =<; I1 ;&Y' ;< . A1 <@' D ' C1 . & EA FC1 ?' C< G<AF<9 16' =6B . D<;=' 9' C1=' . A= <;' ' C< < <' 9' C1=' <P<FB0 1 ' ' 91I <' 1 ' C< . ; 1 ?' C< - 1 ?' AE ><' 6W; '61 ' A' 91;< A @' . A@<' A ' A6 A;' 9' A' FC<= ' 9' @;AE<;=' C< DDW' @?<E ; C' =A1@' . A==' B1=' : ' ;<F<1I <@' C< F . . B 1 ' ' C1=' > <<=' 9; .' C< G;1<= 3=' CA @=& A @' ; =< E1 C' C< F B;A?<' 9' C< C;1= 1A ' A @' C<'KB= ' . A C< @; . =' E<;< A6;<A@ ' D<A 1 ?' 1 ' C< = ;<< =' 9' +A;1=& A @' C< =<F 1 =' E<;< A==B . 1 ?' C<1;' A; . =' ' <1?C ' 3F6 F>' A <; ;<& AFF . 0 GA 1<@' D ' A' @<GB A 1 ' 9; .' C< F . . B <& C< @<GA; . < & A @' C< F;1 . 1 A6' ;1DB A6& G; F<<@<@' ' C< < . G6<' C< 9;1?' G;<GA;<@' ' @<GA; ' <' =GA;<@' C1 . =<69' A @' C1=' 9A . 16 ' A' 9;<=C' =<GA;A 1 & EC1FC' E B6@' CA I<' D<< ' . ;<' GA1 9116' CA ' CA ' 9' C< G;<I1 B=' @A & A @' FCA;?<@' 6W; ' ' ?1I <' C1=' 6A=' 9<;<E<66' ' C1=' E19<& C1=' =1= <;& A @' C1=' FC16@;< ' <' =< ' ' C< . ' = . <' 6 F>=' 9' C1=' CA1;' A @' A' 9<E' K<E<6=& A @' CA @<@' C1=' E166' 'A' . B 1F1GA6' 991F<;' <' C< '?A I<' C<' =1? A6' 9 ;' @<GA;0 B;<' E ' ; E=' 9' A; . <@' . < '61 <@' C<' ; A@' A=' 9A;' A=' C<' +6AF<' @<' 6A' WI 6B 1 & A @' A' G; 9 . @' =16< F<' AFF . GA 1<@' C<' GA==A?<' 9' C<' 9A A6' FA; ;1A?<' 'CA69 GA=' < ' B1=' : 'A; ;1I <@' A ' C<' +6AF<' @<' 6A' WI 6B '

@><J' B3' BD$A' d GAF<' CA@' D<< ' ><G ' I AFA ' ; 1 . @' C<' =FA99 6@& 1E 9Y ' FA ' E<;<' G6A <@' 1 ' <I<; ' @1;<F 1 & A @' A; . <@' ; G=' ><G ' DAF>' C<' G GB6AF<' EC1FC& A ' C<' =1?C ' 9' C<1;' I1F 1 .

X ' ') ; & - ' : ! ' ' '

C<1;' 91KP1 11=' A 1 . A@I<;=1 =(C<' ;<= 6I<@' ' @<=<; " 9; .' C<' 'KP1= 1 ?' ? I<; . < (# @' ' . A;FC' BG ' +A;1=' 1 ' F F<;' E1 C' C<' B= ;1A =(E1 C' C<' 1 < 1 (1 ' EA=' =BGG =<@(9' F; E 1 ?' 1 ' C<' GAG1 A6' C<' B ?' %B><' @<' CA; ;<=(EC ' EA=' C< ' 1 ' C1=' FA . G(A @' CA@' @1= 1 ?B1=C<@' C1 . =<69' 1 ' C<' D x 6<=' 9' A6 . ' A @' S< . AGG<=' <' G; . 1=<@' C<' B= ;1A =' C<' G ==<==1 ' 9' . A '9 ; 191<@' G6AF<=' A=' A' ?BA;A <<' 9' C1=' ? @' 9<1 C' N DB ' C<' 9 16<@' 1 ' C1=' A < . G =' ' ?A1 ' G ==<==1 ' 9' C< . (A @' A ' 6< ? C' . A@<' C1=' G; K<F =' I1=1D6<' ' C<' I< 1 ' C<' 6A <;' 1 . . <0 @1A <6 ' =B . . <@(C1 . ' ' AGG<A;' A ' 1 =' DA;(A @' ' C1=' ;<9B=A6' ' @ ' = (' =< ' C<' 1 1= <;' 9 ;' A;((< . J I1 <(A @' 9 B;' @<GB 1<=(A . B=(L B1 < <(A . A;JB<' A @' (A FA6(' D;1 ?' C1 . ' D<9 ;<' 1 (', ' ' A;;<=' C1 . ' 1 ' C<' . 1@=' 9' C1=' A; . ' C< ' C< ' A;;1I<@' %B . B;1<M' ?A I<' C< . ' BG' ' C<' B= ;1A =' N 'DB ' C<' CA@' ;<61<@' ' . BFC' ' C<' A99<F 1 ' 9' C1=' = 60 @1<;=' N 9 ;' C< ' CA@' FAB?C ' C<' <I 6B 1 A1 ' 9<I<;(A @' . ;1<M(L7S#' %1B B11<M(ADA @ <@' D ' C< . (9 B @' C1 . =G69' F . G<66<@' (3 ' GA=' I<;' ' C<' < < . 3=' FA . G

C<' O1; @1= =' . A@<' A=' =<I<;<' A 1 . A@I<;=1 =' 'C1=' F @BF 'A=' @1@' C<' 1 . A1 (DB ' C< ' E<;<' <I<; C<6<=' AFFB=<@' 9' D<1 ?' 1 ' F . G61F1 ' E1 C' C1 . ' <;? 1AB@((;1== (OBA@< (O< = W<(A @' +W 1 ' E<;<' . ;<' <=G<F1A66 ' @< B F<@' 1D ' D<=G1<;;<' A @' A;A ' ;' A' . . < ' C< ' @1=G6A <@' = . <' I1? B;(A @' D; B?C ' A;A ' D<9 ;<' C<' <I 6B 1 A; ' ;1DB A6' N DB ' C<' EA=' AFJB1 <@' A @' D ; <' 1 ' ;1B . GC' ' C<' ==< . D6 ' ; .' C1=' 1 . <' C<' A = FB6 <=' >' G ==<==1 ' 9' C<' AI< B<=' 6<A@1 ?' ' C<' CA . D<;' A @' C<' ;1DB <=' OBA@< (E1 C' C<' DK<F ' 9' 9;<<1 ?' C<' ==< . D6 ' 9; .' C<' ;A ' 9' C<' SAF D1 =' A @' C<' . . B <(G; G =<@' D 6@' . <A=B;<=(=BFC' A=' C<' @1== 6B 1 ' 9' C<' . B 1F1GA61 (A @' C<' A==< . D61 ?' 9' C<' I< 1 'A ' (B;?<=' (A;;];<(C E<I<;(G; O FB;<@' C<' A@ G 1 ' 9' A C<;' . <A=B;<(AFF ;@1 ?' ' EC1FC' C<' ==< . D6 ' <= AD61=C<@' A' F . . 1 <<' 9' E<6I<' . < . D<;=(< ;B= <@' E1 C' C<' @B ' 9' " EA FC1 ?' I<;' C<' =A9< ' 9' C<' . . B <(A @' A;;<= 1 ?' A66' EC ' =C B6@' 9 ; . ' A 'G6 =' A?A1 =' C<' A 1 A6' ;<G;<=< A 1I<=

' EA;' ' C<' @<A C(9A A6' ' C<' O1; @<(= ' >' G6AF<' D< E<< ' 1 =<69' A @' C<' . B 1F1GA61 ' C<' . . 1 <<' 9' E<6I<' <;;191<@' 1 =' < < . 1<=' A ' F<' D ' A;;<= 1 ?' C<' 1 9A . B=' WD<; (C<' @<GB ' 9' C<' G; FB;<1 ; ' ?< <;A6' 9' C<' . . B <(A @' C<' <@1 ;' 9' C<' <P<F;AD6<' GAG<;' ' +<;H' -# ' C<' SAF D1 ' A @' ;@<61<;' 6BD=' A @' C<' =<F 1 =' @<F6A;<@' C<1;' =1 1 ?=' G<; . A < (A @' ;?A 1M<@' A' 9 ; . 1@AD6<' 1 = . ;<F 1 ' 1 . @<;

C< @1;<F 1 ' 9% ' C< O1; @1= =;<=1= <@ DB ' C< B A1 'A @ C< A = FB6 <= DB;= ' 9 ; C 1 ' I F19<;A 1 = A @ . < AF<= A?A1 = ' C< . ' C<=1 1 ?EA=F 1 B<@1 'A' = A < 9 C< . = '9;1?C 9B6 @1= ;@<;' A @ A ' 6< ? C EA;@ . 1@ 1?C C< G< 1 1 <;= . 1P<@ ' C< =A . < D< FC<= E1 C C< B A1 I <@ 9 ;' C< @1== 6B 1 ' 9 C< . . 1 << 9 E<6I<A @ C< 9;<<@ .' 9 C< G;1= <;=

C1= @<F;<< EA= ;<I ><@ ' C< 9 66 E1 ?@A ' C< . . B < C< SAF D1 = C< =<F 1 =A?A1 'D<?A ' 'A# A <N (D<=G1<;;< 1gA K<F ' A;A %A CAB . < <A @ +AFC<C< A ;' 9 +A;1= ##A1 =C=1= ' 6<A?B<@ C< . =<6I<= ?< C<;'9 ;' C< GB;G = 9 FA;; 1 ? B ' A' =<F @ 1 =B;;<< 1 ' . ;< 9 ; . 1@AD6< CA ' C< G;<I1 B= <' < ;1 ' EA= AGG 1 <@ ' C< F . . A @ 9 C< A; . <@ 9 ;F<' ; '= B= G<;' @A ' <;< G; . 1=<@ 1 ' C< A = FB6 <= A= 6 ?A= C< ' =C B6@ D< B @<;' A; . =' C< A6A; . '?;1 ' EA= 91;<@ C< F=1 ' EA= = B @<@ A @ C< A; . <@ . D EA= 6<@ EA;@= C< I< 1 ' C< B16<;1<=C EC<;< 1 ' =A EA= D<=1<?<@ A @ 1 = @<61D<;A 1 = E<;< 1 <;;BG <@ (A;;#;< A @ C< . 0 . 1 << 9+BD61F A9<6 ' C< ' @< . A @<@ C< =BGG;<==1 ' 9 C< . . 1 << 9 E<6I<A @ 1 ' EA= @<91 1 <6 ' ;<= 6I<@ ' C1= EA= =B991F1< ' 9 ;' %A DB ' 1 ' @1@ ' =A 1=9 ' (D<=G1<;;< A A @ C< . . P . <' [' < . B= ' =A1@ A' @<GB ' 9 C< SAF D1 ' 6BD ['A66 E' C< G< G6< ' ?; E' 6B><EA; . < ;1 ' G6AF<@ C< A; . <@ 9 ;F< A ' C< @1=G =A6 9 C< F6BD A @ C< A;;<= ' 9 C< O1; @1= ' @<GB 1<= EA= ;<= 6I<@ ; 1 9 C< K ' ' A;A ' C1 . =<69 = 1 . @<@ C< F=1 A @ < ;1 ' >'

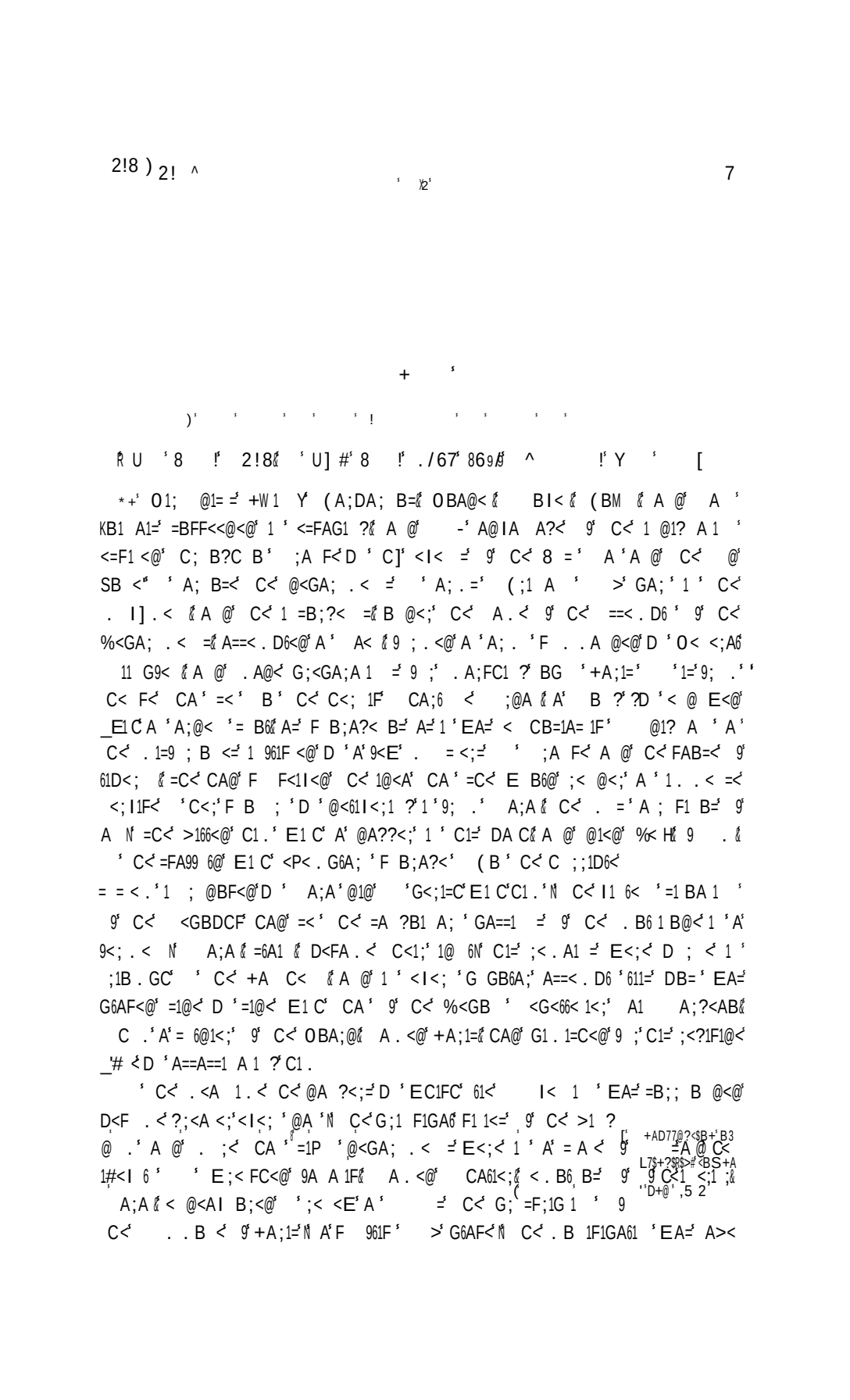
C< ?< <;A6 @1;<F 1 ' 9 C< . I< . < ' ' C< @ SB <=1P ' C B0 =A @ A; . <@ . < ' =B;; B @<@ C< I< 1 ' C< 1 ;<G1@ A KB1 A1= ;A ' ' C< ;1D1 . < A @ C<;<1 ' C< . 1@= ' 9 C< . = ' 9B;1 B= @< B F1A0 1 = C< @< B F<@ C< G; K<F = 9 C< 9AF 1 = + A ; 1= 1= GB;<= C< =A1@N ['+A;1= 1= ? @ DB ' +A;1= 1= GG;<==<@ D ' ;A = EC ' C1;= 'A9 <;' D6 @ A @ G E<; < F F6B@<@ D ' . I1 ? CA ' A66 C< (<I 6B 1 A; ' AB C ;1 1<= 1 ' C< FAG1 A6 =C B6@ D< @<G =<@ ' C< 1 =B;?< ' G< 1 1 <;= < <;<@ A ' CA ' . . < A @ @< . A @<@ C1= A;;<= ' A @ CA ' 9 C1= F 60 6<A?B<= 1 ' C< . . 1 << 9 E<6I<' ' I1 6< '@<DA < >' G6AF< 1 ' C< . 1@= ' 9 EC1FC AF; 1P ;B=C<@ 1 ' C< CA66 F . G6A1 1 ? 9 B ;A?<= ' ;C1FC C< CA@ D<< ' =BDK<F <@ D ' C< . D A @ @<F6A;1 ? CA ' C< 0 I< 1 ' EA= ' 9;<<' C< B A1 ' 1 =<69 EA= 1 @1? A N %A ' <PF6A1 . <@ CA ' C< A 1 A6 . AK<= ' . B= ' D< AI< ?<@ ' C< EC 6< 9 C< I< 1 ' A; =<A @ =< ' 9 ; C E1 C C< G;<=1@< 'A '1 = C<A@'

(

1 4 ! %!++ 5 ! % !% %

C +6AF @B A;; B=<6 1 . < < ;1 C ;=<DAF>(=E ;@ 1 CA @ [CA @ <= C G< G6 ;<JB1;<c =A1@ C1 . C + ;<=1@< W;AB6 @ WFC<66<= [C I< 1 6 @<=1;<= G; . G 1 = CAGG1 <== [C G< G6 CA= A;1=< 61= < . <; GC;A=<=(;<G61<@ < ;1 [@< . A @= CA E< 9 B;F;1 . 1 A6= =C B6@ C @<61I<;<@ BG 1 *T E166 A66 D @<61I<;<@ BG(;A C<;z F;1<@ C @<GB 1<= < ;1 CA@ C1= FA G 1 <@ A?A1 = C< . (A @ 1 I< 1 9<66 DAF> B;0 ; B @<@ <I<; =1@<(1 ;< < <;<@ C A66 9 ==< . D6 1 A = A 9 G; 9 P . @ @1=F B;A?< . < (EC<; 1 6 ?<; GG =<@ C A;;<= 9 C G; =F;1D<@ @<GB 1<=(A @ A;A F = 1 B <@ C1 . =<69 @1F A ; A= 61<9A 9 1 = . < . D<;= E<)9 B;O1; @1= = E<; A;;<= <@ 1 C . 1@= 9 C ==< . D6 (A @ C =A 1=91<@ . B6 1 B@ @1=G<;=<@ ; . C1= @A C O1; @1= GA; EA= F;B=C<@(A @ C I< 1 EA= 6 ?<;9;<<

+



F . . 1 <<' N 0A . D ' EA FC<@' I<;' C<' 91 A F<=&' A @' A . ' EA=' 1 1= <;' 9 ;' A;

C<' <PF1 < . < ' 9' C<' G< G6<' EA=' E <P ;< . <' C<' @<GB 1<=' 9' C<' . B 1F1GA61 1<=' @< . A @<@' A ' C<' j A;' Y9 C<' I< 1 ' C<' A; ;<= ' 9' A6' =B=G<F <@' G<;= =&' A @3 A' 6<I < . 1A==<' 9' C<' EC 6<' A 1 ' [' < ' B=' ?;A ' ECA ' C< ' @<=1;<' z ~ <PF6A1 . <@' %A ' N ['1 ' 1=' D ' C<' FA 3=' ; A;' CA ' E<' . B= ' G; F6A1 . ' B;' F = 1 B 1 ' ' B;' < < . 1<=' C1=&' C1=' 1=' C<' . . < ' EC< ' E<' =C B6@' =E<A;' ' @<I <' C<' 6A= ' @; G' 9' B;' D6 @' ' C<' A 1C16A 1 ' 9' 1 ;A =z ~ C<' A C' EA=' A>< & A @' (A; ;];<' C< & 1 ' C<' A . <' 9' C<' . . 1 <<' 9' +BD61F' A9< & G; G =<@' B;?< ' . <A=B;<=' EC1FC' EW;<' ' D<' FA; ;1<@' 1 ' <P<FB 1 ' D ' C<' . = ' @1 B=' . < C @=' 66' C<' 1 . ?' . < ' 9' 9; . ' <1?C << ' ' E< ' <A;=' 9' A?<' E<;<' =B . . <@' 'K 1 ' C<' A; . & A @' ;A F<' =G<<@16 ' CA@' A ' C<;' F . 0 . A @' 9 B; << ' A; . 1<=' A @' E<6I<' CB @;<@' C B=A @' = 6@1<;=' (B ' <; ; ;' A=' < . G6 <@' ' D A1 ' . <A =' 9 ;' C<1;' =BGG ; ' 1 6< ' A @' 1 F<==A ' ;<JB1=1 1 =' E<;<' . A@<' BG ' C<' 5 . 1@@6<' F6A==<=' N A @' E ' P <' @1 B=' E' AD . 1 AD6<' 6AE=' E<;<' GA==<@& 61<' 6AE' 9' C<' . AP1 . B . & EC1FC' F . G<66<@& ' GA1 ' 9' @<A C& A66' G; G;1< ;=' A @' . <; ' FCA =' '9B; 1=C' A ' A' F<; A1 ' G;1F<' A66' C<' G; I1=1 =' EC1FC' C<' 0 I<; . < ' . 1?C ' ;<JB1;<& A @' C<' 6AE' 9' =B=G<F <@' G<;= =& EC1FC' AB C ;1M<@' C<' G;<61 . 1 A; ' A @' B 61 . 1 <@' 1 . G;1= . < ' 9' <I<; ' G<;= ' =B=G<F <@' 9' F =G1;AF ' A?A1 = ' C<' <I 6B 1 ' ;A F<& ;A =9 ; . <@' 1 ' A' FA . G' 9 ;' <' G ; 1 ' 9' 1 =' G GB6A 1 & D<FA . <' A' G;1= ' 9 ;' A C<;' C<' . < ' 9' F . . <;F1A6' GB;=B1 =' A @' C<' D B;?< 1=1<' 9 B; 1=C<@' C<' G;1= <;=& A @ E<;<' G6AF<@& A=' E<66' A=' C<' AB C ;1 1<=& B @<;' C<' =B ; I<16 ' 6A F<' 9' C<' . D& A=' ;<G;<=< <@' D ' C<' 9 6BD& EC1FC' C<' ;?A . AA1 ~ <, 6B1 A; 9 I< 1 ' @<=1;<@' A ' A ' G;1F<' ' A AFC' ' 1 =<69 ' I<; G ;' G<;= ' ;<F<1I<@' 9 ; '= B=' A' @A ' ' D<' G;<=< ' A ' C<' ==< . D61<=' 9 C1=' =<F 1 ' N F<; 191FA <=' 9' F1 1M< =C1G' E<;<' ?1I< ' B & A @' <AFC' =<F 1 CA@' 1 =' <I 6B 1 A; ' F . . 1 <<

(' C<=<' I1 6< ' . < C @=' C<' I< 1 ' D A1 <@' < . G ;A; ' ;<= B;F<= =B991F1< ' ' < AD6<' 1 ' ' ;1B . GC' I<;' 1 =' < < . 1<=' C< A; . ' B @<;' A6IA@ =' EA=' GB ' ' 961?C ' A ' <; & A @' A' 9 |r f 1 ` Y` = 6< . ' ;< ;AF A 1 ' EA=' . A@<' D ' C<' 1 =B;?< =' A ' A< (;@<ABP' =BD . 1 <@' N A @' B6 ' A @' =& A9 <;' A' @<=G<;A <' = ;B??6<& 9<66' 1 ' =BFF<==1 ' D<9 ;<' C<' <GBD61FA ' A; . =' A' < @W<' 4 A6 <& 6 ?' F 1 B<@& 1 ' C<' A . <' 9' C<' A6 A;' A @' C<' $+' @+CH@ 3

0 / ' ! /' ' 0 ' Y : !>' ' 8* -'

C; <' A ' C<; 1F' A @' <; ;1D6<' F <= ' <GB6=<@' 1 ' A ' A AF>' ' A <=' 1 ' EC1FC' C< ' 6 = ' C<' 1 ;<G1@' A C<61 <A11' C<' < @<A =' 9<{' DAF>' D<C1 @' C<' 1;<' A @' IA JB1=C<@' 1 ' =BFF<==1 ' C<' <GBD61FA ' O< <;A6=' (1; ' ==1? 6K' A @' A F6ABP' '6< ? C' =<I< << ' C B=A @' . < ' R ' C<' 6@' ?A; ;1= ' 9' A < F<' ;<GB <@' C<' D<=' ; G=' 1 ' ;A F<' E<;<' =< '1 ' < @<<' F . . A @<@' D ' - 6WD<;' B @<;' C<' . 1 A6' F . . A @' 9' C<' 1 FAGAD6<' WFC<66<<' EC ' CA@' D<< ' . A@<' ?< <; A61==1 . ' 9' C<' <GBD61FA ' A; . 1<=N' C<' A61= =' IA JB1=C<@' - 6WD<;' A @' C<' A < ZA1=' 1 ' <' DA 6<' DB ' =B99<; W@' 9 B;' R =<FB 1I<' @<9<A =' A ' CA 166 ' A @' C < <' 1 ' EC1FC' C<1;' 6<A@<;=' <=FB;<' (FCA . G=' A @' 6DW<' H;<F<1I<@' . ; A6' E B @=' B; ; B @<@' ' <I<; '=1@<' 1 ' A' < @<<' C<' 1 =B;?< =' E' @< . A @<@' A1@' 9' ?6A @' EC1FC' D<9 ;<' AFF<@1 ?' ' CW1;' ;<JB<= ' . A@<' 1 ' A' F @1 1 ' CA ' C< ' =C B6@' 91;= '' =<1M<' = . <3 =<A G ; ' 1?C ' C B=A @' < @<A =' . A;FC<@' 9; .' @<IA= A <@' F B ; ' BG ' O;A I166<'N' DB ' C< ' E<;< ;<GB6=<@' 9; . " D<9 ;<' C1=' G6AF<' 9; .' C<' ' IA ' 9'A1; 6<; ' I<;<' ; B <@' 'A ' A =' A @' @<= ; <@' A=' C< ' A < . G <@' ' F; =' C<' 1 #A1A'=1E ' 1;<' A ' AI< A ' CA;< <' F 1 B<@' C<' EA;' DB ' 6 = ' C<' ' 1=6A @' 9' 1; . B 1<;=' C<' FC166<=' 9' A' < @W<' C<' C<; 1F' < ;1' %<' 6A' FC<KAFJB<61 ' EA=' >166<@' D ' A' = 6@1<;' EC .' C<' CA@' =GA;<@' 1=' @<A C' CA@' C<' ;<=B6 ' 9';< @<;1 ?' C<' <GBD61FA =' . A= <;=' 9' C<" F 1 . ; ' A @' C<' 6A <;' 1 . . <@1A <6 ' F . . < F<@' C<;<' A' 9;1?C 9B6' #= < . ' 9' <P <; . 1 A 1 ' A' < @W<' IA JB1=C<@' EA=' =B; ; B @<@' D ' O< <;A6' CB;<AB" D ' =1P << ' < ;< FC<@' FA . G=' A @' E<6I<' 96 1 ?' F 6B . =' > E ' D ' C<' A . <' 9' C<' 1 9<; A6' F 6B . =' ;AI<;=<@' C1=' B 9 ; B A <' 6A @' FA; ; 1 ?' <I<; EC<;<' @<A C' A @' 91;<

C<' <GBD61F' EA=' A ' C<' =A . <' 1 . <' I1F ;1 B=' ' C<' 9; 1<;= 3 CA ' 9' C<' ; C' EA=' C<' . = ' =<;1 B=6 ' C;<A < <@' C<' %B><' 9' ;>' D<=1<?<@' %1 . >1;>' E1 C' C1; C;<<' C B=A @' . < 'N' ;< A?' F I<;<@' C<' =1<?<' E1 C' A C<;" A; . 'G = <@' ' CW' =W;' N H C<' +;1 F<' 9' ;A ?<' F . . A @<@' 919 << ' C B=A @' %B FC' A ' < 1 'N' A @' A C1 . @;<@' C B=A @' = 6@1<;=' 9' C<' A661<@' A; . 1<=' <P < @1 ?' 9; .' LB<= ' ' C<' =<66<' D<=1<?<@' C<' = ; ?' G6AF<=' EC1FC' @<9< @<@' C<' GA==<= 'G;<I< ' C<' 1 IA=1 9' ;A F<' 1 ' EA=' <F<==A; ' ' FB ' #Y ' 9Y C<' C1=' 9 ; . 1@AD6<' 61 <' A @' ' ;A1=<' C<' =1<?<' 9' %B >1;> BFCA;@' 1 ' F . . A @' 9' C<' A; . ' 9' C<' ; C' =B@@< 6

$A>A<7B+A' @+I' <@7L7$>@' B3'<M@' @DC?>+A

> >$+><' ! 7>+G$##@'

> ; L>$ +' B3' ,5C2

. A;FC<@' 9; .' C1='G6AF<' E1 C' ' 1 9<;1 ;'9 ;F<=(' A @' A9 <;' A' =A ?B1 A; ' A AF>' ' < 1 (' A@ IA F<@'1 ' C<' 91;= 'G6AF<' A?A1 = ' C<' F ;G=' 9' D=<1EA 1 ' . @<;' ;< A?' ' C<' 91;= ' < F B <;' ;< A?' ?A I<' EA (' A @' C1='F< ;<' ;<GA==<@' C<' =<;'N A9 <;' EC1FC' C<' ;< B; <@' ' C<' FCA;?<' 9 ;' C<' GB;G =<' 9'@1=< ?A?1 ?' C1=' ;1?C ' E1 ? " ' =<F @' A @' @<=G<;A <' F 961F ' >' G6AF<(' A @' C<' < < . ' ;< 1;<@' 1 'A' D @ ' BG ' C<' B . <=' ; A@(' EC<;<' E<;<' C<' C<A@' JBA; <;=' 9' C<' %B><' 9' ;>(' A @' CA6 <@' A ' C<' I166A?<' 9' J @=FC <(' EC<;<' C<' FFBG1<@' A' 9 ; . 1@AD6<' G =1 1

BFCA;@' 9 66 E<@' C1 . (' A @' ' C<' 9 66 E1 ?' @A ' A ' A AF>' BD? >7C&>< B+CA?MBB<F

>' G6AF<' A6 ?' <' EC 6<' 61 <' . <' @< =<' C1F>< = EC1FC' F I<;<@' C<' < < . ' D<FA . <' C<' F< ;A6' G 1 ' 9' C<' AF 1 (' A @' A 6< ? C(' C<' < < . 3<'Jh =1 1 =' D< . ?' A>< (' ;< A?' 9<66' DAF>'1 ' @1= ;@<; BG ' B . <=' ' CW' ;A1=1 ?' 9' C<' =1<?<' 9' %B >1;>' EA=

<' 9' ' C<' 91 11 =' 9' C1='I1F ; (' C<' <E=' 9' EC1FC' EA=' D+ 7$7>$A?C @L<@ ; J@7' ,59

;<F<1I<@' E1 C' < CB=1A= .

61<' . <A 1 . <' C<' A661<='CA@' 9A66< ' DAF>' BG ' C<1;' 61 <' 9' G<;A1 ' 1 =(' A @' E<;<' G = <@' 1 ' 1 . G =1 ?' . A==<=' ' C<' FC<6@ ' A @' C<' <B=<' A6< F1< <=(' @W(' A @' <' LB<= ' CA I1 ?' 9A66< ' 1 ' C<1;' G E<;(' ?A I<' C< . ' A ' 1 . G ; A ' G =1 1 ' ' C<' FC<6@ N' A @' C< ' @<=1;<@' ' D A1 ' <' A6= ' ' C<' A . D;<(' 9 ;' C<' GB;G =<' 9' < AD61 ?' C< I' ' A@ IA F<' E1 C' =A9< ' C<' FAG B;<' 9' ABD<B?<' E B6@' ;< @<;' C< . ' . A= <;=' ' 6 ' 9' C<' DA=1 ' 9' C<' A . D;<(' DB ' A6= ' 9' A66' C<' =GAF<' D< E<< ' CA ' ;1I<;' A @' C<' <B=<'N A @' C< ' AFF ;@1 ?6 '1 I<= <@' CA ' G6AF <' C<' +;1 F<' 9' DB;?(' . . A @<; 1 C1<9(' @1I1@<@' C1=' A; . ' 1 E ' F ;G=N' C<' <(' F =1= 1 ?' 9' C1; 91I<' C B=A @' . < (' =B; ' ; . @<@' ABD<B?<(' EC16=' E1 C' C<' C<;' F ;G=(' 9' A6 . =) 3<DJ@<< @'$+I

<1KBA6' = ;< ? C(' DB;?' F I<;<@' C<' =1<?<' D ' FFBG 1 ?' G@A<@C JK<M@ DA<7S3<BAF

C<' G =1 1 =' 9' % B;6< =' A @' A 1? 1<=K' BFCA;@(' C<' ' I1F ;' A ' @=FC <(' CA@' D<< ' =BG<;=<@<@' 1 ' F . . A @' 9' C<' A; . 9' C<' ; C'D 'S B;@A 'N A @' A; (' 1 'F F<;' E1 C' CA

?< <;A6(' @1;<F <@' 61<' G<;A 1 =' ' A AF>' ' A 1? 1<=' S .@(v ' ><$ +$@I

>A' 7@AB#G@C' B+' >+C' >3<@7' >' G$ B7BDA' 7@A$A<>+?@' D$><

I166A?<' EA=' FA;;1<@' C1=' =BFF<==' 6<@' ' C<' ;A1=1 ?' 9' C<' =1<?<

9' ABD<B?<(' F F< ;A <@" C<' A661<@' A; . ' D< E<< ' C<

FC<6@ ' A @' C<' A . D;<(' A @' < AD6<@' S B;@A ' ' ;<=B . <') >>J@&@7> @C

C<' 99< =1I<' - <66<; . A 'A ' C<' =A . <' 1 . <' @; I<' C<' +1<@ ' YYY

. p <=<' D< @' C<' 6G=' ;A F<' 6 =' ' C<' + ;< <<=' C<' 61 <=' 9
&' C<' <FC&' A @'1 =' A; . ' EA=&9 ;F<@' ' 9A66' DAF>'1 ' 91D ' 9
+<;G1? A ' C<' 61 <=' 9' <1==< . DB;?' E<;<' A6= ' 9 ;F<@'
D' C<' +;B==1A =&' .' F K,B F 1 ' E1 C' C<&' B= ;1A =' B @<;
(;B =E1F>' A @' B; . =<;' (B ' C<' B ?' A @' 1 ;<G1@'
FC<&' A ' C<' C<A@' 9' C<' A; . ' 9' C<' =<66<&' A;;1I<@' D ' A' =>169116'
. A;FC' ' B; . =<;3=' 96A >&' A @' CAI1 ?' @;1I< ' C1 . ' DAF>&
<99<F <@'C1=' KB F I ' E1 C' C<' A; . ' 9' C<' =C1 <' 4 (;B =
M$+@' >+C') B@' A@##@ ' @<7@><' 9 E1F>' 9 E<@' B; . =<;=';< ; ?;A@<' . I< . <)' A @' .
<M@'>##$@A ',5 2' C< F<9 ; C' C<' E ' ;<' FC' A; . 1<=&' F . D1 <@&' A@IA F<@
A @' < FA . G<@'1 ' C<' +A6A 1 A <' ;A F<&' 1 ' 1 =' = ;B??6<' E1 C' B; G<K
;<F I<;<@'A66' CA '1 ' CA@' 6 = &' E1 C' C<' <PF<G 1 ' 9' @W&' A6< F1< <=#
A @' A' 9<E' = ; ?' G6AF<=' 1 ' B==1L ' C]' A661<@' G;1 F<=' D A1 <@
611 ?&' A @';<F1G; FA66 ' AFFB=<@' <AFC' C<;' 9' D<1 ?' C<' FAB=<' 9' C<1;
. B BA6' @<9<A =
C<' ?6 ; ' 9' +;A F<' A ' C1=' 1 . <' F =1= <@' < 1;<6 ' 1 ' 1 =' A; . 1<=' N
EC1FC' =<< . <@' ';1IA6' <AFC' C<;' 1 ' C<1;' <99 ; =' ' <99AF<' C<' GG; 0
D;1B . ' E1 C' EC1FC' A ' A ; F1 B=' ? I<; . < ' CA@' D;A @<@' C<' - <GBD61F'
1 ' C<' < <=' 9' B; G<' C<' . . 1 <<' 9' +BD61F' A9<
M@' B ; ; $<@@' B3' DJ#$B' >3@<K ' 3B##BS@C' $<A' L$<$#@AA' >7@@7' B3' ; D7C@7 ' P <' $A' +@?@AA>7K (&
) >7?M ',5 2' =A1@' C<' <P<F;AD6<' A1 SB= &' EC< ' G; FB;1 ?' A' @<F;<<' 9 ;'
C<' F 1 BA F<' 9' C<' @<F< . I1;A6' G E<;' B 16' C<' F F6B=1 ' 9' G<AF< , ;'
1 ' 1=' <F<==A; ' CA ' C<' =E ;@' 9' C<' 6AE' =C B6@' 9A66' 1 ' <I<; ' @1;<F 1 '
A=' ;AG1@6 ' A=' G ==1D6<&' A @' CA ' C<' E<1?C ' 9' B;' A; .' =C B6@' D<' <I<; 0
EC<;<' 9<6 Q' @' CB=' A=' F;<A <@' CA ' <;;1D6<' G E<;' EC1FC' < @<@' D '
@<= ; 1 ?' 1 =<69 ' C<' <P<FB 1I<' AB C ;1 ' EA=' F F< ;A <@' 1 ' C<' CA @='
9' C1=' F . . 1 <<&' EC1FC' C<6@' C<' 61I<=' A @' 9 ; B <=' 9' <I<; ' <' 1 ' 1 ='
G E<;' N A @' EC1FC' EA=' =BGG ; <@' D ' C<' G GB6AF<&' EC . ' 1 ' D;1D<@' D '
. <A =' 9' C<' . AP1 . B . &' A @' EC ' ? I<; <@' 1 =' AF 1 ' D ' . <A =' 9' C<'
M@ B$@+B3 @70' <I 6B 1 A; ' F . . 1 <<=' 9 <;' <AFC' I1F ; ' D A1 <@'
RB7 '12 . 2! ' L ?N& < < . 1<=' E1 C1 ' D ' C<' <GBD61F&' 1 ' ;@<;<@'
9;1?C 9B6' <P<FB 1 =' ;' C ;;1D6<' . A==AF;<=' (A;;];<' A B F<@' A' 9;1?C 9B6'
A A C< . A' A?A1 =' C<' F1 ' 9' =&' C<' I<; ' A . <' 9' EC1FC
<7B?$BDA'G@+0 ?<A F< 9 C< B+G@+<$B+F' C<' @<F6A;<@' =C B6@' D<' A 1C16A <@&' A @' ;<G6AF<@' D ' CA ' 9
C<' . . B <' 99;A FC1<' ' @3 <;D 1=&' BFCW&' A @'
B C ' E<;<' C<' DA;DA; B=' <P<FB ;=' 9' C<' @<F;<<=' 9' C<' F . . 1 <<
A?A1 =' C1=' 1 . 9 ; B A <' F1 ' C<' =FA99 6@' EA=' '=6 E' A '1 = B <

9 ;' C<1;' I< ?<A F<ℓ A @ C< IA JB1=C<@1 =B;?< =E<;< . E<@ @ E 'D ' . B=JI1< ; '1 ' C< GBD - F G6AF<=

B6 ℓ A< ℓ A;=<166<=ℓA @ (;@<ABP D<FA . < C< C<A ;< 9 C ;;1D6<'_ =F< <=' '+A;1= C< . ='166B= ;1 B= . < 'A @ C<6<A@<;= 9A66 GA; 1<=E<;< @;A??<@ ' C<=FA99 6@ℕ C< LB<< ℓ C< D6< A;1< 10 <, <ℓA @ (A1(ℓG<;1=C<@ CB=E1 C1 ' A 9<E @A = 9 <AFC C<;'ℕ A @ AD . . AD6< F1;F1B = A F<=E<;< A@@<@ ' C< 6 C ?<BJ@7 C ;; ;' 9 C<1;'F @< . A 1 'A @ GB 1=C . < ' C< O1; 0 @1= =EC 'E<;<G; =F;1D<@ ' C< @ SB <= '9 66 E<@ C< . ℓA @EA6><@ ' C<1;' @<A C E1 C C< . ='= 1FA6 F B;A?<' C<%B>< 9 D+$AM ; @+< 9 ;6<A =EA= '=GA;<@ℕ (A . AI<A @%BG ; %B <; ;<E<;< 1 . . 6A <@ℓ A @E1 C C< .' C< O< <;A6= BFCA;@ℓ B= 1 <ℓ (1; ℓ (<AB ' CA; A1=ℓA @ . A ' C<;='+W 1 'A @ (BM '@<= ; <@ C< . =<6I<=ℓA @ C<1;'@<A@ D @1<=E<;< 9 B @ CA69 <A < ' D 'E 6I<=' A@A . < (6A @ @1<@ ' C< =FA99D6@ℓ A @ EC< 'C<D CB=DA @ C<A;@ 9 1 ' C< >166<@ C1 . 1=<69 ' C< C1?CEA ' 66 C<9 1# 1I< O1; @1= =E<;< GB ' D< @ C< K1A6< 9 C< 6AE ' E 'C1 . @;<@ C B=A @ =B=G<F <@ G<;= =E<;<1 . G;1= <@ℕ D6 @ 96 E<@1 'A66 C< F1 1<='ℕ F . . ; ' . A =1 =ℓ F I< =ℓA @ FCB;FC<= E<;< @<= ; <@ℕ . B . < = 9A;'E<;<D; >< '1 'G1<F<='ℕ C<;< E<;< ' CA @=6<9 ' 'FB6 1IA < C< <A; Cℓ A @ 1> . 1 < EA= A@@<@ ' C< =F B;?<= EC1FC @<= 6A <@ ;A F<' C< GBD61F F;<@1 ' EA= A 1C16A <@ℕ A @ 61< <PG< =<= 9 C< O I<; . < 'E<;< =BGG61<@ D ' C< =A6< 9 C< G; G<; ' 9 C< G; =F;1D<@ G<;= =ℓA @ D '@<=G 1F . <A=B;<=EC1FC E<;< < 9 ;F<@ D ' C;<A =' 'EA=@<=1;<@ 'F =<F;A <ℓ D ' C< <= AD61=C . < ' 9 A' <E' <;A ℓ A';<I 6B 1 'B <PA . G6<@1 ' C1= ; ℓA @ C< @1I1=1 = 9 C< <A;ℓ C< A . <= 9 C< . C= A @ @A =ℓ EW;< FCA ?<@ℓ A @ C< C;1= 1A ' FA6< @A;' EA=';<G6AF<@ D 'A' - <GBD61FA 'FA6< @A;' C< <E';A' EA= @LD $?;$ @A <@ 9; .' C< @ <G < . D<;ℓ 2! ℓ C< G<;1 @ A 'EC1FC C< <GBD61F EA= 9 B @<@' FF ;@1 ?' ' C1= <E';A;;A ?< . < ' C< <A;' EA= @1I1@<@ 1 ' E<6I<ℓ . C= 9 C1; ' @A = <AFC , # < @W . 1A1;<ℓ D;B . A1;<ℓ A @ 9;1 . A1;<ℓ 9 ;' C< AB B . ℕ 1IV=<ℓ G6BI1V=<ℓ I< V=<ℓ 9 ;' C< E1 <;'ℕ ?<; . 1 A6ℓ 96 ;WA6ℓ G;A1;1A6ℓ 9 ;' C< =G;1 ?'ℕ A @ 91 A66 ℓ . <==1@ ;ℓ C<; . 1@ ;ℓ A @ 9;BF 1@ ;ℓ 9 ;' C< =B . . <;' C< 91I< =BGG6<0 . < A; 'A @ = 9 C< <A;';<F<1I<@ C< @1 B= A . < 9 C< A = FB6 1@<=' (B ' C1= EA= ' < B?C 9 ;' C< . . B < 9 +A;1=ℓ C< ' B @<;' C< @1;<F 1 ' 9 61< 1 9A . B= CAB . < <ℓ 9 C1= = 166 . ;< 1 9A . B= =BD= 10 B < WD<; ℓ 9 =1 ℓA' ?< <;A6 9 C< <I 6B 1 A; 'A; . ℓA @ 9 C<

A C<1= ₡ AFCA;=1=' 6 M' '@< . A @<@' CA ' C<' = 1 B 1 A6' D1=C G' 9' +A;1=' A @' 611=' I1FA; ?< <;A6' =C B6@' ADKB;<' C;1= 1A 1 'A ' C<' DA;' 9' C<' I< 1 ₡ @<F;<<@' C<' E ;=C1G' 9' <A= ₡ A @' <= AD61=C<@' 9< <=' EC1FC D<FA . <' =FA @A6 B=' =F< <=' 9' @<DABFC<; 'A @' A C<1= . '

M@' SB7AM$L' B3 @>AB+ ' 1 ' L$BDA 3@A<$G>#A '

EA=' $ 6I' EC< '1 =' FA;<<;' 9'F;1 . <' A @' 9 66 'CA@' ;<AFC<@' 1 =' C<1?C ' CA ' C<' <I 6B 1 CA; ' . I< . < ' 9' C<' . . B <' ;<F<1I<@' A' FC<F>' C< '1 =' . A@ <=' CA@' ;<AFC<@' A' F<; A1 'G 1 ' C<' . . 1 <<' 9'+BD61F' A9< '@<F6A;<@'1 =<69'A?A1 = '1 ₡ A @' D<=G1<; ;<' EA=' G; C1D1 <@' D ' C<' I< 1 '9; .' A>1 ?' A ' . <A=B;<=' A?A1 = '9;<<@ .' 9' E ;=C1G

%A ' A @' C1=' 9;1< @=₡ A . 166<' %<= . B61 =₡ +C161GG<A11P₡ AF; 1P₡ AD;<' @3 ?6A 1 <₡ A @' <= <; . A ' @< . A @<@' . BFC' . ;< ' C< ' E1=C<@' ' <= AD61=C' A' 6<?A6' = = < .' 9' ;@<;₡ AC@' 9 ;' C<' D< <;' AFF . 0 G61=C . < ' 9' C1=' GB;G =<' @<=1;<@' ' =B=G< @' C<' 9B F 1 =' 9' C<' <I 0 6B 1 A; ' ;1DB A6₡ '< . G ' C<' G;1= =' 9' C<' =B=G<F <@' G<;= =₡ A @' @1== 6I<' C<' F . . 1 <<=' A . 166<' %<= . B61 =' GBD61=C<@₡ E1 C' A' I1<E' ' C1=' < @₡ A' K B; A6' EC1FC' D ;<' C<' A . <' 9' C<' ' + !' @<I <@' '@< B F1A 1 =' 9' C<' @<=G 1= .' 9' C<' @1F A ;=' D<=G1<; ;<' EA=' C<' . ='9 9; 1@AD6<' A . ?=' C< . ₡ A @' A . 166<' A @' C1=' 9;1< @=' < @<AI B;<@' '?A1 'C1 .' I<;' ' C<1;' I1<E=' ℕ DB ' D<=G1<; ;<' G6A <@' E1 C' C< . ₡ A @' EC16=' A99<F 1 ?' ' D<' <B ;A6' EA;@=' C<' IA;1 B=' A A? 1= 1F' GA; 1<=₡ ;<A66 ' G6 <@' C<' @<= ;BF 1 ' 9' C<1;' FC1<9=' <' A9 <;' C<' C<; ' 1=' F 66<A?B<=' 1 ' C<' . . 1 <<' 9' +BD61F' A9< ' E<;<' 9B;1 B=' A?A1 = ' A . 166<' A @' C<' %A 1= ='' <' @<61I<;<@' C<' 6A <;' 1 ' C<1;' G E<;₡ A @' D A1 <@'1 ' ;< B; ' C<' C<A@=' 9' WD<; ₡ 6 M₡ CAB . < <₡ =1 ₡5 A @' C<' G;1 F1GA6' A A;FC1= =' 9' C<' . . 1 . <' C< ' C1=' F . GAF ' CA@' D<< ' F F6B@<@₡ C<' A=F< @<@' C<' ;1DB <' A @' @< B F<@' ' C<' I< 0 1 'A=' < < . 1<=' 9' C<' WGBD61FA1 ' C<' 91;='G6AF<' C<' B6 ;A <I 6B 1 1= =₡ A @'1 ' C<' =<F @' C<' %A 1= =₡ EC .' D<' FA66<@' C<' @<;A <=' A1 ' SB= ' =BGG ; <@' C1 . ₡ CB @<;1 ?' A?A1 = ' C =<' EC .' C<' = 6<@' C<' < < . 1<=' 9'I1; B<' A @' <;; ;₡ A @' @< . A @1 ?' CA ' C<' 0 I<; . < '=C B6@' D<' < @ E<@' E1 C' C<' . ='<P < =1I<' G E<;=' 9 ;' C<' GB;G =<' 9' GB 1=C1 ?' C< . ' C< A A;FC1= =' 9' C<' . . B <₡ WD<; ₡ 6 M₡ =1 ₡ A @ C<1;' AFF . G61F<=₡ E<;<' C<' 91;=' 9' A66' =<1M<@' A @' F ' ;DB@') >7?M' / ' @< . <@'ℕ A @' . =' 9' C< .' @1<@' A=' F EA;@=' a C' A;FC₡ ,5 / 2! b' C<' <I 6B 1 A; 'A; . 'EA=' @1== 6I<@'ℕ A @' C<

I< 1 F . G<66<@ C< . . B < AGG<A;A 1 =DA; 61A >1 9 ;
C< I<; AF =EC1FC @<= ; <@1 =G E<;

C< B; 9%A A @C1=9;1< @=CA@ EF . < =9A . B=;<G;<0
=< A 1I<= 9 C< 6@ B A1 C<1; A . <= A @ <=G<F1A66 CA 9 C<
6<A@<; AGG<A;<@ D< A66 G E<;9B6 9 ; . <@ 9 C< G; K<F <@
A AF>= 9 C1= < < . 1<=%A ;<G61<@A= C< %B>< 9 0B1=< CA@ 9 13
. <;6 @ < [C< E166 @A;<33 (B C< . . 1 << ;<F> <@E1 C
? @ ;<A= C< 9<A;= 9 C< ==< . D6 C<%A 1= =E<;<A; ;<= <@
g C< " C 0<; . 1 A6 A @ D<=G1<; ;< G;<I< <@ C<1; ;;<= 9 C<
D<1 ? C<A;@1 C< ==< . D6 [< =CA66 =<< @A <
=A1@ [EC< C<; C< I< 1 E166 > EC E D;<A> A G;< < @<@Y1@ 6
EC1FC CA= 6 ? D<< 1 A = A < 9@<FA ; EC< 61<; 611=1@ 6 E166
F;B=C C< I< 1 A @ C< G< G6< 1 1 =9A66 A1 SB= ;<A@ C<
AFFB=A 1 A?A1 = C< AFFB=<@A @ C< ==< . D6 A G;< A = BG ; 9
9<A; @<F;<<@ C<1; ;1A6 D<1 ? D; B?C D<9 ;< C< <I 6B 1 A;
;1DB A6 C< @1= 1 ?B1=C<@ C< . =<6I<= D C<1; G< 6 <PG;<==<@
F < . G 9 ; C<1; KB@?<= C< C< CA@ D<< F @< . <@ %A
<PF6A1 . <@ [C< 1 . . 6A < 11= C< A . D1 1 9 A 9<E I1 A B=
D;1?A @= DB 61< E1 6 ? < K C<1; =BFF<== @;A?
D<=G1<; ;< A6 ? E1 C . < 9 66 E= . < C<
EA6><@ D 6@6 C<1; GB 1=C . < C; B?C C< . 1@= 9 A M@$7@N@?D<$B+
=16< F; E@ ; . CA 1 . < I 1F< EA= ;A1=<@9 ; = . <
1 . < A?A1 = C< %<F< . I1;= A @ C< I< 1 @<F;<<@ CA [<;; ;
A @ A66 C< I1; B<= E<;< C< ;@<; 9 C< @A
%1; ;1 ? 9 B; . C= C< G E<; 9 C< E 9 ; . 1@AD6< . . 1 <<= CA
9 C< +BD61F A9< A @ CA 9 C< 0< <; A6 <FB; 1 F 1 B<@ D<
B 61 . 1 <@ A @ @<A C D<FA . < C< 6 1 = ; B . < 9 0 I<; . < C<
A?< = 9 C< . . 1 << 9 +BD61F A9< E<; < =BD= 1 B <@ 9 ; C = < 9
C< 1 . A1 1 C< @<GA; . < =N A @ 1 EA= 61< CA C< G; F =B6=
A; ;1<; 1 C< F1 9 A <= S =GC <D 1 CA 9 ; ; A= AB<#
A1? < A ; A ?< @1= 1 ?B1=C<@ C< . =<6I<= D C<1;
A ; F1 1<= ; ;6<A = C< G;1 F1GA6 1 CAD1 A =E<; < =6A1 N 9;<F9 9
FB BK1 B3 <J@
A <; @B =<I< << B ? ?1;6= AFFB=<@ 9 CA I1 ? @A F<@ ?B ; ; $<<@@ B3
A A DA66 ?1I< D C< +; B==1A = G<;1=C<@ C< =FA99 6@ <<@ C>L>7< ; >+<E
C< =A . < @A N A +A;1= A . ?= C< . = 166B= ;1 B= I1F 1 . =
9 C1= G<;1 @ . A D< . < 1 <@ C< F ?< A;1A A;=CA6= A166<= A @

A166W C . 1 1= <; AFCAB6 A @ AI<;@1 6C 6<A; <@ AI 1=1<; C I< <;AD6 A . 1? @ A6<=C<;D<= C;< . < . D<; 9 C = 1 B< ==< . D6 % 3 G;W . <= 16 C B;< A @ CAG<61<; # A @ 91 A66 C A ?<61F +;1 F<== 61MAD< C EC =< D6 @ EA= @< . A @<@ D (166AB@ A;< <= [1= 6 C< @<A@ EC <I<; F . <DAF>= =A1@ (A; ;]; [C< . ; C< = F1A6 D @ G<;=G1;<= A@@<@ @3 <;D 1= [C< D< <; 1= 1 = C<A6 C EA= D . <A = 9 C1= = = < . CA C< 1 9<; A6 D<=G1<; ; < A @ C< 91B1A 1F A1 SB= @<F6A;<@ CA C< @<=1;<@ <= AD61=C C< ;<1? 9 I1; B< C< A== F1A <@ E1 C C< . =<6I<= C< GA;A6 1F A @ G1 16== B C A @ 9 ; . <@ ?< C<; <I< E1 C1 C< F 6 . 1 9<< 1 =<69 A' 9 ; . 1@AD6< ;1B . I1; A <EC1FC D 1= 6A 1 ?@<= ; <@ 1 =<69 (B D<9 ;< C< D<FA . < @1=B 1 <@ C< %<F< . I1; = < @<AI B;<@ 6A C< 9 B @A 1 = 9 A <E F @< 9 . ;A6= A @ <E 1 = 1 B0 1 = D<=G1<; ; <EC16= ;<1? 1 ? D . <A = 9 . . ;@<; <I<; C<0 6<== G<;F<1I<@ CA 1 EA= <F<==A; C< @<A1 =C B6@ CAI< A ;<61?1 B= DA=1=N A @ C< F =<JB< 6 FAB=<@ C< 0 I< 1 @<F;<< CA C< ;< FC G< G6< AF> E6<@?<@ C< <P1= < F< 9 A' 0 @ A @ C< 1 . . ; A61 9 C< = B6 < C< CA@ 9s <= @<@1FA <@ C< BG;< . < (<1 ?@ ;B C KB= 1F<@ I1; B<@ 91;1< @=C1G@ 9;B?A61 @ ? @ 9A1 C@ A @ . 1=<; <?A;@<@ D C1= '91 . A 1FA6 A@ . 1;<; = A= C< FC1<9 9 B @<; 9 A . ;A6 @< . F;AF A @ A= C< <E G 199 9 C< <; A6@ C< E A A1 <@ C< C<1?C 9 C1= G E<;

C< " C +;A1;1A6@ C< @A F =<F;A <@ C< 9s < 9 C< BG;< . < (<1 ?@ EA= C< FB6 . 1 A 1 ? G 1 9 D<=G1<; ; <3= ;1B . GC@ C<A>L7@ ; @ = G;<=1@< 9 C< I< 1 C< EA6><@ A 1 = C<A@ A6 <@ # A S1 . < A @ E< GAF<= 1 A@IA F< 9 C< C<; . < . D<; = < <M ,5) EA= C< DK<F 9 ?< <;A6 A < 1 @ C1= F B < A F< EA= ;A@1A E1 C G;1@< A @ @<61?C N C< D ;< 96 E<; = A @ <A; = 9 F ; 1 C1= CA @= A @ A@IA F<@ C< A6 A;@ 9; . EC< F< C< A@@;<==<@ C< G< G6< 1 C< FCA;AF <; 9 C<1; C1?C G;1<= EA= C G<@ CA 9; . C< F<9 ; C C< 0 I<; . < E @@ D< 9 A ?< 6< FCA;AF <;@ DB C< F F6B@<@ C1= A@@;<== E1 C C<=< E ;@=) +< G6<@ 6< B= =B;;< @<; B;=<6I<= @A C< ;A =G ; = 9 A 1 . . 1P<@ K N . ;; E E< E166 ;< <E B; F 961F E1 C I1F<= A @ 6 ;A = CW 9 66 E1 ? @A @ C< = +;A1;1A6@ C< <P<FB 1 = E<; <F . . < F<@@ A @ D<=G1<; ; < FAB=<@ B C G; G = A <P<F;AD6< 6AE@ C< =A ?B1 A; GB;G ; 9

_EC1FC . 1?C ' D< AGG61<@ A ' G6<A=11;< ' <I<; ' ;< FC '=BDK<F ' FF ;@0
1 ?' ' C1=' 6AE AFFB=<@ G<;= A' E<;< ' D< ;<9B=<@ C< A@1@F< 9'
F B =<6 A @ ' D< ;1<@ 1 ' DA FC<= EC16< C< KB;1<=' E<;< ' D<
D 1 . @ D ' ' C<;' ;B6< CA ' CA ' 9' C<1;' E ' F =F1< F<=' ' EA=' &
A@ G <@ N A @ E' BJB1<; 1 I166< C< GBD61F AFFB=<; A @ C<
KB@?<= C1=' AFF . G61F<= . < . D<;=' 9' C< <I 6B 1 A; ' ;1D1 . A6
=FA;F<6 ' =B991F<@ 9 ;' C< F @< . A 1 ' 9' C =< EC ' E<;< G; =F;1D<@'
' +A;1=' A6 < 919 ' I1F 1 . =' A' @A ' E<;< @;A??<@ 99' ' GB 1=C . <
C< =FA99 6@ EA=' ;A =9<;;<@ ' C]' ABD B;?' . B 1 < A @ A '
AJB<@BF ' EA=' F = ;BF <@ ' ;<F<1I< A @ FA;; ' 99' C< D6 @ CA ' EA=
=C<@ ' 1

C< 1 . . ; A6 FA . GA1? ' 9' 2! ' EA=' F . . < F<@ B @<;' C1=' <P<F;AD6<
0 I<; . < N A @ C< ; C<; ' 9; 1<;' EA=' = 166 1 . C1=' NM@?> ; L>$ +'
<A; C< FC1<9' C<A ;< 9' C< EA; ' C< G;1 F1GA6 G =1 1 =
FFBG1<@ D ' C< ;< FC E<;< 1 < 0B1=< A @ ABD<B?< N A @ C< '
E<;< B @<;' C< F . . A @ 9' +1FC<?;B S B;@A ' CA I1 ?' 6<9 '
C< F . . A @ 1 ' FC1<9' 9' C< A; . ' 9' C< ; C 9 ;' CA ' 9'
C< A; . ' 9' C< =<66<' C< +;1 F< 9' DB;?' C< B A @<; 1 '
C1<9' 9' C< A661<@ A; . 1<= F . . < F<@ G<;A 1 = D ' C< ROM@'J#B?Q>C@'B3'
D6 F>A@< 9' A @;<F1<=' E1 C' A ' A; . ' 9' AD B ' A' C1 . @;<@' '
C B=A @' . < ' C< ?61=C B @<;' C< %B>< 9' ;># F I<;<@' 61<
D6 F>A@< ' C< =1@< 9' A . D;A1 A @' DB;?' C1 . =<69 E1 C' A' B . <; B='
F ;G= G = <@' C1 . =<69' ' C< =1@< 9' 0 . =< EC16=' C< B= ;1A ' ?< <;A6
6A1;9A1 <P < @<@'C1='9 ;F<=' 1 '9; ' 9' < 1 ' A @' B; ;A ' BFC' E<;<
C< G ; 1 = 9' C< E ' A; . 1<=' EC< ' C< 1 IA;1 ' 9' 6A @<;=' D ' C<
6<9 ' E1 ?' 9' C< ;< FC' A; . ' EA=' ;<= 6I<@' ' 0< <;A6
BCA . ' A @' ;<AB' . A;FC<@' ;AG1@6 ' 9; . ' 166< EA;@=' B+M> ;'>+C'
C< < < . 3=' ;1?C A @' D A1 <@' A ' B=F; ' A' 91;= ' I1F ; ') B+>B7B+>+C'
I<;' 6A1;9A1 ' S B;@A ' C< ' ;<F<1I<@' ;@<;=' ' @< AFC'
9 ; 91I< C B=A @' . < ' 9; . ' C< A; . ' 9' C< =<66< A @' ' A@IA F<
D ' 9 ;F<@' . A;FC<=' ' C< A . D;< A @' C< <B=< 9 ;' C< GB;G =<
9' F;B=C1 ?' C< A661<@' 6<9 ' C< A@ G 1 ' 9' C1=' G6A ' =<FB;<@' C<
=BFF<==' 9' C< FA . GA1? ' C< A661<=' 1 ' IA1 ' < @<AI B;<@' ' FB ' C<
;< FC' 9 ;F<=' 1 ' EA1 ' D ' A' D 6@' . A;FC' BG ' 1 . F 1 ?' EC1FC' 61<='
D< E<< ' 1 < A @' B; ;A ' 0< <;A6' BCA . ' D A1 1 ?' A' F . G6< <
I1F ; ' I<;' C< %B>< 9' ;>' A ' B;F 1 ?' C< < < . ' C E

7*

A‘ CB @;<@‘ A @‘ =1P << ‘ C B=A @‘ C< A@ . 1 1= ;A 1 ‘ <PCAB= <@‘ D ‘=BFC‘ <99 ; =‘ F B6@‘ <1 C<;‘ G; G<;6 ‘=BGG ; ‘ C< ; G=‘ ;‘=BGG6 ‘ C< . ‘ E1 C‘ =B991F1<B ‘ <JB1G . < =N DB ‘ C< = 6@1<;=‘ . A A?<@‘ ‘ @1=G< =< E1 C‘ ECA ‘ A;< ?< <;A66 ‘ F =1@<;<@‘ C< ?;<A <= ‘ <F<==A;1<=‘ C< ‘ ‘ 6 ?<;‘ < 0 FA . G<@‘ 1 ‘ < =‘ DB ‘ D1I BAF><@‘ D< <A C‘ C< D;A FC<=‘ 9‘ ;<<=‘ C< 991F<;=‘ 6<9 ‘ E1 C B ‘ GA ‘ 61I<@‘ A=‘ @1@‘ C< G;1IA < = 6@1<;=‘ A < C< =A . < >1 @‘ 9‘ D;<A@‘ A @‘ . A;FC<@‘ ‘ 9 ‘ A=‘ C< ‘ @1@‘ E1 C‘ C<1;‘ > AG=AF>=‘ ‘ C<1;‘ DAF>=‘ C< < CB=1A= . ‘ 9‘ I1F ; ‘ I;A=‘ C< =BGG ; ‘ 9‘ C<=< 1 . . ; A6‘ A; . 1<=

+1FC<?;B‘ F 1 B<@‘ C1=‘ . A;FC‘ EA;@=‘ C< . B C‘ 9‘ C< FC<6@ ‘ A @‘ C< <B=<‘ @;1I1 ?‘ DAF>‘ C< ?61=C‘ EA;@=‘ C< =<A‘ EC16= ‘ S B;@A ‘ FFB0 G1<@‘ C< <B=< D< E<< ‘ 1]?< A @‘ Aw= ;1FC ‘ 1 ‘ 9; ‘ 9‘ 6A1;9A1 ‘ A @‘ C< B= ;1A = ‘ ‘ < AD6< S B;@A ‘ ‘ ;<AFC‘ 61< DA >‘ 9‘ 61< C1 <‘ 1 ‘ EA=‘ <F<==A; ‘ CA ‘ C< =6; B6@‘ F; ==‘ C< <B=<‘ A @‘ D<9 ;< C< F B6@‘ @ ‘ C1=‘ 1 ‘ EA=‘ <F<==A; ‘ CA ‘ C< =C B6@‘ 9 ;F< C< < < . 3=‘61 <=‘ ‘ C< B; C< A @‘ C< w;‘ ;1DB A;1<=‘ 9‘ @1< <B=< ‘ < 9 B?C ‘ E ‘ DA 6<=‘ 1 ‘ =BFF<==1 ‘ ‘ C<=< E ‘ = ;<A . =‘ A @‘ EA=‘ I1F ‘ ;1 B='1 ‘ <AFC‘ GB;=B<@‘ 6A1;9A1 ‘ A=‘ 9A;‘ A=‘ C< C1 <‘ >‘ #=;63Y %JBH‘ 6 ? <‘ A @‘ D<=1<?<@‘ Aw= ;1FC ‘ C< A; . ‘ 9‘ CW ; C‘ C<Y - C61# CB=‘ D A1 <@‘ G ==<==1 ‘ 9‘ C< 61 < 9‘ CA ‘ ;1I<;‘ A @‘ (G1= 6< ‘ %BF‘ A @‘ < 6 ‘ 9<66‘ D<9 ;< 1 ‘ C< %B>< 9‘ ;>‘ B =>169B6‘ A @‘ B =BF0 F<==9B6‘ 1 ‘ A ‘ C1=‘ AF 1F=‘ <IAFBA <@‘ C< @1= ;1F ‘ D< E<< ‘ C< B=< A @‘ C< ACA6‘ < 9‘ C< D;A FC<=‘ 9‘ C< C1 <‘ A @‘ 9<66‘ DAF>‘ EA;@=‘ 1 . < ‘ ?B< ‘ ‘ C< ACA6‘ EC<;< +1FC<?;B‘ =G<<@16 ‘ A;;1I<@‘ ‘ < ?A?< C1 . ‘ ‘ C< C‘ I< . D<;‘ C1=‘ G6AF< 9<66‘ 1 ‘ C< CA @=‘ 9‘ C< ;< FC‘ N A @‘ E1 C‘ C1=‘ 6A= ‘ A @‘ D;1661A ‘ =B< ‘ %B>< #'#;>‘ F<==‘ <; . 1 A <@‘ C1=‘ ?6 ;1 B=‘ FA . G1@? ‘ 1 ‘ C< ; C ‘ C< 9Kc<=Y #f1 <?B* ‘ A; . ‘ E< ‘ 1 ‘ FA . < =‘ A @‘ C< I<;96 E1 ?‘ 9‘ C< A <;=‘ A ‘ C< AGG; AFC‘ 9‘ E1 <;‘ F . G<66<@‘ C< =B=G< =1 ‘ 9‘ C< 1 IA=1 ‘ 9‘ 66A @‘ 6‘ C< =G;1 ?

C< <99<F ‘ 9‘ C<=< =BFF<==<=‘ EA=‘ 9<6 ‘ D ‘ C< A1 . 1<=‘ 9‘ C< =<66< A @‘ C< GG<;‘ C1 <‘ F . . A @<@‘ D ‘ 0< <;A6‘ 1FCAB@‘ ‘ C< +;B==1A =‘ EC .‘ C< ‘ 9AF<@‘ D<1 ?‘ ‘ 6 ?<;‘ =BGG ; <@‘ D ‘ 5 ‘ C< B= ;1A =‘ ‘ C< ; C‘ @1@‘ ‘ I< B;< ‘ . A>< C<A@‘ E@Q A?A1 = ‘ C<=< A; . 1<=‘ 1 ‘ C< =?<=‘ A @‘ ;<F; ==<@‘ C< C1 <N #‘ YWY EC<;< C<;< 6 ‘ ;< . A1 <@‘ 1 ‘ C< G ==<==1 ‘ 9‘ 61< A661<=‘ ‘ C< 6<9 ‘ DA >‘ 9‘ CA ‘ ;1I<;‘ BP< . DB;?‘ A @‘ A < F<‘ C< D6 F>A@< 9 ‘ ‘ B

EC1FC' EA=' 1 . . <@1A <6 ' ;@<;<@' D ' C<' . . 1 <<' 9'+BD61F' A9< N#' C<' ;< FC' A; . =' ;1B . GC<@' =1 . B6 A < B=6 '1 ' C<' ; C&' C<' <A=&' A @' C<' = B C' '%B? ; . 1<;'A @' F< 'G; . G 6 ';<GA1;<@' C<' 91;='; <I<;=<=' ' C<' 9; 1<;=' 9' GA1 &' A @' CA I1 ?' @;1I< ' C<' GA 1A;@=' B ' 9' ;A F<&' 1 IA@<@' C<' G< 1 =B6A&' EC<;<' F< ' >' A1 ' <DA= 1A ' A @' <;AD1A

BFC' EA=' C<' G; =G<; B=' = A <' 9' ;A F<' AD; A@&' EC< &' E<A; ' A @' @1=0 ?B= <@' A ' C<' A ; F1 1<=' EC1FC' @1=?;AF<@' C<' F B ; ' A ' C . <&' A' F<; A1 ' B . D<;' 9' . < . D<;=' 9' C<' B A1 ';<= 6I<@' 'GB 'A ' < @' ' C< . &' A @' ' A I< ?<' %A &' A . 166<' %<= . B61 =&' A @' C<1;' C<;' . B;@<;<@' 9;1< @=' ' C<' C<A@' 9' C1=' GA; ' E<;<' C<'

BJ@AL$@77@' I< 1 A61= =' A661< &' (B;@ '@<' 3 1=<&' A @' <?< @;<' N A @' C< ' E<;<' =BGG ; <@&' 1 ' C<' . . 1 <<' 9'+BD61F' A9< #' D ' (%6AB@' A;< <=&' A @' @3 <;D 1=&' EC ' E<;<' D C' K<A6 B=' 9' C<' G E<;' 9' C<' ;1B . I1;A <&' A @' 1 ' CA ' 9' C<' O< <;A6' <FB;1 'D ' A@1<;&' B6A &' A @' . A;&' EC ' D<6 ?<@' ' C<' I<; C; E ' 9AF 1 ' 9' C<' . . B <' (D<=G1<;';<&' 1;;1 A <@' A ' C<1;' =B66< ' ;<=1= A F<' 'C1=' I1<E#&' EA=' ;<= 6I<@' 'F;B=C' A @'@<= ; ' C< . &' A @' C< 'G<;F<1I<@' CA ' C< ' . B= ' <1 C<;' A 10 F1GA <' C1=' @<=1? =' ;' D<' C1=' I1F 1 . =' C< ' 91;=' AFFB=<@' C1 . ' 9' ;A ' 1 ' C<' F . . 1 <<=&' A @'=G ><' 9'C1 . ' B @<;' C<' A . <' 9'+1=1= ;A B=' N C< ' C< ' ;<G; AFC<@'C1 . 'E1 C'1 < @1 ?' ' . A><' C1 . =<69'GA==' A=' A 'AG = 6<'=< ' D ' O @' D ' 9AI B;1 ?' C<' . << 1 ?=' C<6@' D ' C<' 6@' CA; ;<B=<' @ .' OB<;6<' A @' A' ;1@1FB6 B=' 9A A 1F' A . <@' A C<;1 <' C1 &' EC .' C< ' =< ' ' C<' =FA99 6@' 1 ' =G1 <' 9'C1 . ' ; .' C1=' 1 . <' D<=G1<;;<' AGG<A;<@' DB ';A;<6 '1 ' C<' . . 1 <<=&' A @' . A>1 ?' C<' SAF D1 ' 6BD' C<' F< ;A6' G 1 ' 9'C1=' =EA &' @< B F<@' C<;<' C =<' EC .' C<' <; . <@' C<' %A 1= =' 66 G E<;9B6' 1 ' C1=' F6BD&' . A= <;' 9' C<' . D&' A @' =BGG ; <@' D ' C<' A ;' 6<B;1 &' D ' < ;1 &' C<' F . . A @<;' 9' C<' A; . <@' 9 ;F<&' A @' D ' C<' <I 6B 1 A; ' ;1DB A6&' A6' C<' . < . D<;A' 9' EC1FC' E<;<' C1=' F;<A B;<=&' C<' D<61<I<@' C1 . =<69' ' D<' G E<;9B6' < B?C' ' A AF>' C1=' < < . 1<=' 1 ' C<' I<; ' . 1@=' 9' C<' 0 I< 1 &' A @' ' C<' C' C<; . 1@ ;&' @< B F<@' C<;<' C<' F . . 1 <<=' <' EA=' 61= < <@' '1 ' =16< F<&' A @' C< ' ;<F<1I<@' A' 91;=' ;<GB6=<N C1=' A@0 @;<=' D<1 ?' ;<9<;;<@' 9 ;' <PA . 1 A 1 ' ' C<' I<; ' F . 11 <<=' EC .' C<' AFFB=<@' <' E< ' ' C<' =A . <' <I< 1 ?' ' C<' SAF D1 ' 6BD&' EC<;<' C<' ?A I<' EA ' 'C1=' ;A?<&' A @' EC<;<' C<' EA=' ;<F<1I<@' E1 C' < CB=1A= . ' I<; ' G;<GA;A 1 ' EA=' . A@<' A ' 611=' F6BD' @B;1 ?' C<' 1?C ' 9 ;' A '1 =B;;<F 1 N A @' A ' C<' =A . <' 1 . <' A' 6<A?B<' EA=' 9 ; . <@' D< E<< ' C<' I< 1 A61= =&' C<' %A 1= =&' C<' 1?C &' A @' C<' A;A1=

C[=1 1 ?ʻ 9ʻ C< ! Cʻ C<; . 1@ ;ʻa 2 Cʻ SB6 ť 2! ŧʻ G< <@ʻ . @<;ʻ 61< . =ʻ C;<A < 1 ?ʻ AB=G1F<=ʻ ʻ A1 SB=ʻ A=F< @<@ʻ C< ;1ʻ >$$B3 BJ@AƠ DB <ťA @ʻ GG =1 <C1 .ʻEA=ʻ=<A <@ʻ - D<=G1<;;<ʻŃ A661< ʻA @ʻ 'C#1@ ʻy'D#Kʻ (166AB@ʻ1 <;;BG <@ʻ A1 SB=ʻA @ʻ F . .< F<@ʻ C< A AF>ʻ ʻ - D<=G1<;;< KB . G<@ʻ 9 ;EA;@ʻ ʻ ;<G6ʻ ʻ C< . ť EC< ʻ Aʻ F; ʻA; =<ť 9; .ʻ <I<; ʻ=1@< 9ʻ [ʻ% E ʻ E1 Cʻ C< ;A ʻz˜ A661< ʻ D;A @1=C<@ʻ Aʻ @A??<;ťA @ʻ C;<A < <@ʻ ʻG6B ?<1ʻ1 ʻ C< C<A;ʻ 9ʻ C1 .ʻEC .ʻC< @<=1?0 A <@ʻA=ʻ C< . @<;ʻ ; . E<66ťA @ʻ G<;=BA@<@ʻ C< ==< . D6ʻ ʻ ;@<;ʻ C< A;;<=ʻ 9ʻ < ;1 ťA @ʻ ʻ@<F6A;<1 =ʻ =1 1 ?ʻ Aʻ G<; . A < ʻ <ʻ [ʻ <ʻ B=ʻ Eʻ F =1@<;ʻ C< F @BFʻ 9ʻ C< ;A ť˜F 1 B<@ʻ A661< ʻ ʻ C B=A @ʻ C;<A < 1 ?ʻ F;1<=ʻG;<I< <@ʻ D<=G1<;;<9; .ʻD<1 ?ʻ C<A;@ťEC< ʻC< . A@< Aʻ 91 A6ʻ <99 ; ťA @ʻ <PF6A1 . <@ť [ʻ+;<=1@< ʻ 9ʻ A==A==1 =ʻź ;ʻ C< 6A=ʻ 1 .<Kʻ E166ʻ Bʻ D A1ʻ . <Aʻ C<A;1 ?ʻc˜ 1 @1 ?ʻ CAʻ C< F B6@ʻ ʻ D A1ʻ 1 ť C< ;Aʻ A . 1@=ʻ C< D< FC<=ʻ 9ʻ C< ==< . D6ʻ61><ʻ A . A@ . A ť A@@;<==1 ?ʻ =BGG61FA 1 =ʻ ʻ C< . < . D<;=ʻ 9ʻ C< 1?C ť EC ʻ ;<GB|=<@ʻ C1 .ʻE1 Cʻ C ;; ;ť 166ʻ Aʻ 6< ? Cʻ C< 9<66ʻ DAF>ʻ 1 ʻ C1=ʻ =<Aʻ <PCAB= <@ʻ A @ʻ =G<<FC6<== [ʻ 1=<;AD6< E;< FCʻ ˜ʻ =A1@ʻ Aʻ . < . D<;ť [ʻ1ʻ 1=ʻ C< D6 @ʻ 9ʻ %A ʻ CAʻ = 196<=ʻ Bʻ z˜ 1=ʻ A;;<=ʻ EA=ʻ 1 . . <@1A <6ʻG; G =<@ʻ 1=ʻ D; C<;ʻ A @ʻ <DA=ʻ;<JB<= <@ʻ ʻD< A66 E<@ʻ ʻ=CA;<C1=ʻ 9A <ťA @ʻ C< ==< . D6ʻB A 10 . B=6ʻ ;@<;<@ʻ CAʻ C< ʻ=C B6@ʻ D< A;;<= <@ʻ A6 ?ʻ _ I1Ć D<=G1<;;<ť B C ťA @ʻ A1 SB=ʻ [ʻ C< <GBD61Fʻ 1=ʻ 6 = ť˜ =A1@ʻ D<=G1<;;<Ń [ʻ C< D;1?A @=ʻA;< ;1B . GCA `

C< I1F ; ť C E<I<;ť EA=ʻ = 166ʻ B F<; A1 ʻ C< SAF D1 =ʻ CA@ʻ A6=ʻ @<F6A;<@ʻ C<1;ʻ =1 1 ?ʻG<; . A < ťA @ʻ CA@ʻ=E ; ʻ ʻ@1<ťAFF ;@1 ?Y ʻ C<K;ʻʻ E ʻ <PG;<==1 ť ;A C<;ʻ CA ʻ 61I<ʻ B @<;ʻ Aʻ F;1 . 1 A6ʻ ? I<; . < ʻ C< . B 1F1GA6ʻ @<GB 1<=ʻ G; F<<@<@ʻ ʻ C<1;ʻ F6BDť A @ʻ < ;1 ʻ ;Aʻ C; B?Cʻ C< = ;<< =ʻ E1 Cʻ Aʻ @;AE ʻ =AD;<ʻ 1 ʻ C1=ʻ CA @ťF; 1 ?ʻ [ʻ Aʻ; . =ʻz˜ (Bĺ C< EA=ʻ A;;<= <@ť ?< C<;ʻ E1 Cʻ C< A 1 A6ʻA?< ʻ+A A ť A @ʻ6 A@<@ʻ E1 Cʻ FCA1 =ʻ C< =<F 1 =ʻ >ʻBGʻA; . =ť A @ʻ C< I< 1 ʻ=B . . <@ʻ C< .ʻ ʻ1 =ʻ @<9< F<ʻ %;B 1 ?ʻ C< @Aʻ C< ʻ E<;< =BFF<==9B6ť A @ʻ @B;1 ?ʻ C< C B;=ʻ 9ʻ @A;> <==ʻ C< 1 =B;?< =ʻ D A1 <@ʻ C< A@IA A?<ʻ C< 6A <;ʻ . A;FC<@ʻ1ʻAʻD @ʻ ʻ C< G;1= =ť A @ʻ=<ʻ 9;<< D<=G1<;;<ť < ;1 ťA @ʻ C<1;ʻ AFF . G61F<=ʻ < ;1 ʻ1 . . <@1A <6ʻCA@ʻ C< I< 1 ʻ=B;; B @<@ť A @ʻ FA ʻG 1 <@ʻA?A1 =ʻ1ʻ <;; ;ʻ;<1? <@ʻ1ʻ C< ==< . D6 ť DBʻ C< 1 . .1 < F< 9ʻ C< @A ?<;ʻ ?AI<1ʻF B;A?<Ń < ;1 ʻEA=ʻ GBʻ D< @ʻ C< GA6< 9ʻ C< 6AEʻŃ C1=ʻ ?B <;=ʻ ;<9B=<@ʻ ʻ91;<ťA @ʻ ;< ;<A <@ʻ E1 Cʻ C1 .ʻ ʻ C< V <6ʻ @< 166<ʻ C1=ʻ;<9B=A6ʻ @<F1@<@ʻ C< 9A < 9ʻ C< F <= ʻ C<

8 , 8 J 3' 0-E@9; Q' E2E;F 9' 9B-' 9-R0 -;+9 *

+ '

)' ' ' ' ' ' ') ' ' ' "

U_ '8 !' 2! 'ZU #' # !' ' [!' 'U` #' - @ !' 2!*'
a 1 '? !' ' 9 [

' <I 6B 1 A; ' . I<. < ' A A1 <@' 1 =' ?;<A <=' G E<;' ' C<' ! C'
C<; . 1@ ;(' A @' ' C<' =A . <' @1K ' C<';<AF 1 'A?A1 =' 1 ' =<' A?A1 =
1 ' C<' F . . 1 <<=' CA@' I<;F . <' C<. =<6I<=' EC< ' C< ' ⊨@77B+A<A'
I<;FA . <' D<=G1<;;<' E ' <E' GA; 1<=' E<;<' E' 9 ; . <@') CA ' 9' C<
. . 1 <<=(' A Z6' CA ' 9' C<' 1 . A1 (' EC1FC' CA@' F ;1DB <@' E1 C' A661< '
' C<' I1F ; ' 9' C<' ! C' C<; . 1@ ;(' A @' EC1FC' C< F<' EA=' FA66<@' C<'
C<; . 1@ ;1A =' C<' 91;=' GA; ' ;<61<@' ' C<' SAF D1 ' 6BD' A @' C<'
9ABD B;?=(' A @' C<' =<F @' ' @1<' . AK ;1 ' 9' C<' I< 1 ' A @' @1<'
A 1 A6' OBA;@(' ;' A; . <@' =<F 1 =
' ?;<A ' B . D<;' 9' G;1= <;=' E<;<' =<' 9;<<' @B;1 ?' C<' @A =' EC1FC
9 66 E<@' C<' ! C' C<; . 1@ ;(' A @' =<I< E ' . < . D<;=' 9' C<' . . B <
G<;1=C<@' ' C<' =FA99 6@' C<' . < . D<;=' 9' C<' <I 6B 1 A; ' ;1DB A6
E<;<' ;<G6AF<@(' A @' C<' G E<;=' 9' C<' F . . 1 <<=' E<;<' @1 . 1 1=C<@' C<
@1 B=' 6AE' 9' C<' @' +;A1;1A6(' ;<6A 1I<' ' C<' F;1 . 1 A6' G; F<@B;<(' EA=
AD 61=C<@' 6 ' C;<<' A==< . D61<=' 9' C<' =<F 1 =' E<;<' A66 E<@' A' . C(
A @' C<' ?;A B1 ' 9' 9 ; ' = B=' A' @A ' ?1I< ' ' C<' G ;' F1 1M< =' EC '
A < @<@' C<. ' EA=' =BGG;<==<@' 1 A66 (' C<' A99161A 1 ' 9' C<" GA;< '
= F1< ' 9' C<' SAF D1 =' E1 C' A66' C<' C<;' SAF D1 ' 6BD=' 1 ' ;A F<' EA=
G; C1D1 <@' ' C<' =A . <' 1 . <' ;W; ' =B . . <@' C<' 1 . ?' . < ' 'A; . =
A?A1 =' C<' <;; ;1= =' 1 ' C<' F 6B . =' 9' C1=' K B; A6' # ' ' ,' # '
. 'A' A @' 1 ' A =E<;' ' C1=' AGG<A6' A' F; E@' 9' B ?' . < ' D<6 ?1 ?' '
C<' E<A6 C1<;' A @' . 1@@6<' F6A==<=(' EC ' ;<F<1I<@' C<' A . <' 9' C<' [' O16@<@'
B C(" ;AI<;=<@' C<' = ;<< =' 1 ' B . <; B=' DA @=(' A; . <@' E1 C' 6 A@<@'
F6BD=(' A @' EA?1 ?' @<=G<;A <' EA;' A?A1 =' C<' SAF D1 =' C<' F6BD' 9' C<'
6A <;' EA=' A AF><@' A @' A>< ' A9 <;' A ' < <;?< 1F' ;<=1= A F<(' A @' A66' +A;1=

*

D<FA . DB 91<6@ DA 6< C< I< 1 =BGG ; <@ A66 C<=< ;<AF 1 A; G; F<<@1 ?=& A @ =< 9 ;1A6 C< A ; F1 B= BJB1<; 1 I166<& C< GBD61F AFFB=<;&&A= E<66 A= S =<GC <D A @ A;;1<;& ECV CA@ 9B69166<@ C<1; . 1==1 =& C< <A ; ;A= A @ C< C<; A A <=& A= @< . 1AFA6<P <; . 1 A ;= 66 C;<< GA1@ C<G< A6 9 C<1; F;1 . <= C< =FA99 6@& A @ C<1; A ; F1 1<= D<1 ?GBD61F6 ;<I<A6<@& A@@<@ = 166 . ; C< C ; ; ; 1 =G1;<@ D C<1; 6A AFF . G61F<= C< I< 1 q;<FA66<@ 1 = ==< . D6 =<I< C;<< @<GB 1<= EC CA@& D<< G; =F;1D<@ 9 ; CAI1 ? G; <= <@ A?A1 = C< F @< . A 1 9 C< O1;

0BA@7$J@C @1= = ;<I ><@ C< @<F;<<= 9 <PGB6=1 1==B<@ A?A1 = C< G;1<= = A @ D6<=M ;< <= AD61=C<@ GBD61F E ;=C1GM =BG0 G;<==<@ C< . AP1 . B . M A @ CA@ C< DB= 9 A;A 1 = E CA66 D; >< <E F; G 9 <I16=& C E<I<;& EA= G; @BF<@ D C< =B@@< ;<AF 1 1?C . 1661 = 9 A==1? A = CA@ D<< =< 1 F1;FB6A 1 & A @ EC< C<; <

>+Q7BL<?K B3 6 ?<; A I1 6< 6AE= < 9 ;F< C<1; F1 < F &

<MB >AA$ +><A C< 1 . . <@1A <6 9<66 919 << 1 . <= D<6 E C<1; 91;= IA6B<M FA=C @1=AGG<A;<@ 9; . F1;FB6A 1 & A @ C< G; @1?1 B= 9A66 1 C< IA6B<

<B?Q#RBJJ#B 9 C< A==1? A = EA= 9 66 E<@ D A E16@ = = < . 9 =G<FB6A0 1 EC1FC ;B1 <@ A . B6 1 B@< 9 9A . 161<= G 6 =BFF<<@<@ C< <; ;1D6< 6AE 9 C< . AP1 . B . & A @ C< 9A; . <; = AI< ?<@ C< . =<6I<= 9 ; C<1; 6 ? A @ F;B<6 GG;<==1 D C 6@1 ? DAF> A66

><B$B@F =G<F1<= 9 G; I1=1 = A . 1 < E . A@< 1 = AGG<A;A F<& A @ C< 6 E<; ;@<; = 9 C< 9ABD B;?= ;<?;< <@ C< 1 . < EC< C< = = < . & 9 ? I<; . < ?AI< C< . D;<A@ A @ G E<;& A @ F< . ; < CA@ ;<F B;= < B . B6 =

<I<;A6 9 C< . = 9A . B= <; ; ;1= =& (1 AB@ A;< 61<=& 66 @3 <;D 1=& (A;;];<& A @ A@1<;& E<;< F @< . <@ ; ;A =G ; A 1 & A @ E<;< A>< C< 9 ; ;<== 9 A . & ?< C<; E1 C =<I< << . < . D<; = 9 C ;s <& EC CA@ =BGG ; <@ A 91;= 1 =B; ;<F 1 & C< DK<F 9 EC1FC EA= =AI< C< . =F @ 1 =B; ;<F 1 & EC1FC >G6AF< C< C O<; . 1 A6& CA@ D< <; =BFF<== M DB A 6< ? C 9 C< = +; A1;1A6& A

M@ L@BL#@ ABC C1;@ EA= ;?A 1M<@ A I<; 9 ; . 1@AD6< G6A F =G1;A ; = @<F6A;<@ CA [C< A . < 9 C<

y L7$# ,5 KKK? ;??K1 G< G6< C< E B6@ D A1 D;<A@ A @ ;<=B . < C<1; ;1?C = , C< ;< <= AD61=C . < 9 C< = 1 B 1 9 3! 8 M C< ;<6<A=< 9 C< GA ;1 = M A @ C< =B=G< =1 9 A AB C ;1 EC1FC @1@ < . A A < 9; . C< G< G6< C< ;<= 6I<@ F;<A < A <E . B 1F1GS661 M =<1M< C<

DA;;1<;=ℓ C< <6<?;AGCℓ A @ C< F=1 N A @ <I<;' ' GAB=< 1 ' C<1;' E ;> B 16 C< ' =C B6@ CAI< G; FB;<@ 9 ;' <I<; ' 1 CAD1 A ' 9 ;A F< 9 @ℓ =<FB;1 ℓ A @ CAGG1 <==' C< ' 1 I1 <@ A66 C< ; G= ' K 1 ' C<1;' ;A >=ℓ A @ . A;FC<@ ;AG1@6 ' BG ' C< I< 1 ℓ EC1FCℓ A>< ' D ' =B;0 G;1=<ℓ FA66<@ C< =<F 1 = ' A; . =' C< @ ;= 9 C< A66 9 ==< . D6 ' <;< D; >< ' C; B?Cℓ A @ C< . B6 1 B@<ℓ AFF . GA 1<@ D ' A 9B;1 B= . D 9 E . < ℓ 1 IA@<@ C< ;1DB <=ℓ F; 1 ? B ℓ [(;<A@' A @ C< = 1 B0 1 ' 9 3!8 ż C< CA66 9 C< ==< . D6 ' =G<<@16 ' D<FA . < A 91<6@ 9 DA 6<' C< @<GB ' B?B1=ℓ =E ;@ 1 ' CA @ℓ A ' C< C<A@ 9 C< I< <1AB= A @ C< ?< @A; . <=ℓ A ' 91;=' ;<GB6=<@ C< A==A16A =ℓ DB ' C< ' ;< B; <@ ' C< FCA;?<' C< G;<=1@< ℓ (1== ' @3 ?6A=ℓ EA= A1 . <@ A ℓ A @ @<GB ' <;AB@ℓ EC ' ;B=C<@ 9 ;EA;@ ' G; <F ' C1 . ℓ EA= C1 . =<69 E B @<@ℓ @;A??<@ AEA ' D ' C< F; E@ A @ D<C<A@<@' C< ?;<A <;' B . D<;' 9 C< @<GB 1<= > ' 911?C ℓ DB ' (1== ' @3 ?6A= ;< . A1 <@ FA6 . 6 ' =<A <@ℓ G; 0 <= 1 ? A?A1 = ' C< B ;A?<= F . . 1 <@ D ' C< . D' C< F B;A?<B3 1 =B;?< = C;B= ' C<1;' E<AG = A?A1 = ' C1= D;<A= ' A @ (1= '@8 ?6A= @< . A @<@ CA ' C< =C B6@ GB ' C<1;' G; G =1 1 = ' C< I <' C< ' C< ;<9B=<@& ' C< ' G;<=< <@ ' C1 . ' A G1>< C< D6<<@1 ? C<A@ 9 W;AB@ℓ A @ C< B F I<;<@ A @ D E<@ D<9 ;< 1 ' C< @<GB 1<= 9 C< ;s <ℓ EC ' E<;< 9AI B;AD6< ' C< 1 =B;;<F 1 A; ' . I< . < ℓ GB ' A ' < @ ' C1= <;;1D6< =F< < D ' =<1M1 ? C< DB;<ABPℓ A @ @<F;<<1 ? D ' C< . =<6I<= A6 < 61< A; 1F6<= F A1 <@ 1 ' C< 1 =B;?< =3 . A 19<= ' (B ' C< DA A61 = 9 C< =<F 1 = E A;;1I<@ℓ G ==<==<@ C< . =<6I<= 9 C< A;; B=<6ℓ < <;<@ C< A66 9 ==< . D6 ' E1 C 91P<@ DA < =ℓ A @ @; I< C< F; E@ D<9 ;< C< . ' C< . < . D<;= ;< B; <@ 1 ' A D @ ℓ A B66<@ C< I <= EC1FC CA@ D<< ' GA==<@ @B;1 ? C< B . B6 ℓ A @ ;@<;<@ C< A;;<= ' 9 9 B; << ' 9 C<1;' B . D<;' EC ' CA@ D<< ' AFF . G61F<= 9 C< 1 =B;?< =' ' C< 9 60 6 E1 ? @A ' C< A; . <@ 9ABD B;?= . A@< A IA1 ' A < . G ' A ' A 9;<=C A AF>ℓ A @ A ' 6< ? Cℓ ' C< C +;A1;1A6ℓ A9 <;' A B . B6 ' 9 EC1FC C< DK<F ' EA= ' =< ' 9;<< C< . B;@<;<;' 9 C< @<GB ' W;AB@ℓ C< 9ABD B;?= E<;< =B;0 ; B @<@ A @ @1=A; . <@' C< I< 1 ' C< ' =BGG;<==<@ C< <I 6B0 1 A; ' . . 1 <<ℓ A @ AD 61=C<@ C< = 1 B 1 ' 9 3!8

CB= < @<@ C< ;B6< 9 C< +< G6<ℓ A @ 9; .' C1= 1 . < C< B+><DD<$B+' B3 2!8

O1; @1= ' GA; ' D<FA . < G;<@ . 1 A ' 1 ' C< ==< . D6

C< ;<AF 1 ' EC1FC F . . < F<@ 1 ' C<; . 1@ ;' @1@ ' FC<F> C< =BFF<== 9 B;' ; G=ℓ EC =< AB@AF1 ' EA= =<F @<@ D ' A' =<I<;< E1 <;' %B;1 ? C< 6A= ' @A = 9 2! ' C< F 6@ D<FA . < 'A @ 2!*

<PF<==1 I <(' A @' C<' 1F<' ;< @<;<@' C<' <B=<' A @' C<' ACA6(' EC1FC' E<;<' C<' < < . 3=' @<9< F<=(' GA==AD6<' A ' =<I<;A6' G 1 =' C<' ;< FC' ; G=(' @<= 1 B <' 9' F6 C<=' A @' =C <=(' A @' E ; ' B ' D ' C<' 9A 1?B<=' A < @A ' ' C<1;' D;1661A ' 9<A =' 9' A; . =(' CA@' =FA;F<6 ' D<< ' A' . C' 1 ' C<1;' E1 <;' FA . < =(' EC< (' A ' C<' =1?C ' 9' C<(' ;1I<;=' < FCA1 <@' 1 ' 1F<(' C<1;' A;@ B;(' <PF1 <@' A=' . BFC' D ' C<3 F = <; A 1 ' 9' C<' < < . ' A=' D ' C<' E1=C<=' 9' C<' %B FC' GA ;1 =(' AF> E6<@?<@' ' D= AF6<=' @<;'+1FC<?;B3=' @ S) ' ' . . A @' C< ' < <;<@' 66A @(' A ' =<I<;A6' G 1 =(' BG +1 'C<?;A3#A' EC1FC' C<' %B><'K 9' ;>' A @' C1=' A; . ' ;< ;<A <@' 1 ' @1= ;@<; BA18(23*' BG ' %<I< <;'N EC16=' C<' +;1 F<' 9' ;A ?<(' = BG191<@' D ' @1= . A (' ;< . A1 <@' 1 . . IAD6<' A ' 0 ;FB . ' C<' GA ;1 =' ECp' E<;<' C = 16<' ' C<' A@ C 6@<;' =BGG ; <@' C<' <99 ; =' 9' C<' ;< FC' A; . (' A @' E1 C1 ' A' =C ; ' 1 . <' C<' EC 6<' 9' 66A @' EA=' F JB<;<@' C<' A@ ' C 6@<;' 96<@' ' G?6A @(' A @' C<' A <= 0< <;A6' ? I<; <@' C<' <GBD61F(' EC1FC' 9 ; . <@' A' F6 =<' A661A F<' E1 C' ;A F<" +;B==1A(' D<1 ?' E' C;<A < <@ ' 5 % ' '0 ' F F6B@<@' A' G<AF<' A ' (A=6<(' A @' GA1 (' 1 ' EC1FC' F B ; ' C<' E< ' 8 ' ;< FC' E<;<' 1 ' G ==<==1 9' . A 'G6AF<=(' =G<<@16 '9 66 E]@' C<' <PA . G6<' 9' +;B==1A' D ' =1? 1 ?' A' ;<A (' C<' G;1 F1G161' F @1 1 ' 9' EC1FC' EA=' CA ' C<' ;< FC' F JB<= =' 1 ' C<' +< 1 =B6A' =C B6@' D<' <PFCA ?<@' 9 ;' C<' GA 1=C' G ; 1 ' 9' ' % . 1 ?

;A F<' EA=' 6<==' 9 ; B A <' 1 ' C<' F B;=<' 9' C1=' <A;' ' C<;' <A= <; ' 9; 1<;' +1FC<?;B' CA@' ;<=1? <@' C<' F . . A @' 9' C<' A; . ' 9' C<' ; C' ' A><' CA ' 9' C<' A; . ' 9' C<' C1 <'N C<' FFBG1<@' C<' 6<9 ' DA >' 9' CA ' ;1I<;' 9; . A < F<' ' ;A=DB;?N EC16=' S B;@A (' E1 C' C<' A; . ' 9' A . D;<' A @' <B=<(' EA=' FA <@' ' C<' C1 <(' 1 ' C<' @1;<F 1 ' 9' 6 ? <' #1<' A661<=' CA@' 6 =' C<' EC 6<' 9' C<' 6<9 ' DA >(' E1 C' C<' <PF<G 1 ' 9' BP< . DB;?' A @' A < F<' C<' 91;=' 9' C<=<' G6AF<=' EA=' ;<@BF<@' D ' 9A . 1 <' ' C<' C' SB <(' A @' C< F<9 ; C' 1 ' EA=' C<' DK<F ' 9' C<' ;< FC' ' F; ==' C<' ;1I<;(' C<' ;1?C ' DA >' 9' EC1FC' EA=' @<9< @<@' D ' C<' B= ;1A =(' B @<;' 6A1;9A1 ' A @' B; . =<;' (B ' C<1;' A; . 1<=' E<;<' ' 6 ' 1 ' EA ' 9' AD= 6B <' <F<==A;1<=(' DB ' 9' EAP' / ' c#Ď v C<YŸ . <A =' 9' F = ;BF 1 ?' D;1@?<=' ' EA=' <F<==A; (=##;# @' C<;<9 ;<(' ' @<6A ' 611=' G<;A 1 ' . A ' . C=(' A @' A ' K . B 1 ("A @D ' 6< ? C(' ' C<' * C' <G < . D<;(' S B;@A ' <99<F <@' 61<' GA=' (C1 <A @<;YYŸ A?<' A ' C;<<' G 1 =(' 1 ' C<' < I1; =' 9' %B==]6@ ;9N EC16=' < . D<; 8 #Q +1FC<?;B' ; =<@' 1 ' A6 . =' A ' C<' =A . <' 1 . <' AD I<' C<' = ; ?' 9 ; ;<==' 9' A C<1 . (' EC1FC' 1911 . <@1A <6 '=B; ;<

@<;<@'# A@' C<' E ' A; . 1<=' E' AF <@' 1 ' F F<; ' A @' <99<F <@' A'KB F0
1 ' 1 ' C<' IA66< ' 9' C<' A1 (' C< ' E B6@' CAI<' D<< ' AD6<' ';WG 6=<'
6A1;9A1 ' A @' B; . =<;(' A @' 'CAI<' IA JB1=C<@' C< . ' 1 ' =BFF<=I 'N DB '
611=' G6A ' EA=' ' 9 66 E<@' +1FC<?;B' CA@' A ' B @<;= A @1 ?' E1 C' C<'
+;1 F<' 9' @W(' C<' 6<A@<;' 9' C<' < . 1?;A ' GA; N' C<' A6;<A@ ' G6 <@'
C<' D< ;A A6' 9' C<' <GBD61F(' A @' F . G; . 1=<@' C1=' E ' A; . ' A @' CA '
9' S B;@A ' D ' C<' E<A> <==' 9' C1=' . I< . < =' <' A66 E<@' 6A1;9A1 '
1 . <' ' F F< ;A <' =BG<;1 ;' 9 ;F<=' A?A1 = ' C1 . (' 'A66 E' C1 . =<69' ' D<'
D<A < ' @1=?;AF<9B66 (' A @' C< ' =CB ' C1 . =<69' BG' 1 ' A '
C<1 . ' 6A1;9A1 ' E' . A;FC<@' A?A1 = ' S B;@A (' EC (' =<GA ' +1 C<?;AA
;A <@' 9; .' +1FC<?;B(' =CB ' 1 ' D< E<< ' C<' C1 <' A @' C<
<B ;A6' ?; 1 . @' 9' +;B==1A(' A @' 1 ' EA ' 9' C<' . <A =' 9' =BGG ; 1 ?' C1=
; G=(' EA=' 9 ;F<@' ' ;< ;<A ' A @' ;<F; ==' C<' ;1I<;' C1; ' C B=A @
;< FC' ; G=' F 1 B<@' '1 I<= ' A < F<N' DB ' 6A1;9A1
D ' A' =>169B6' . A BI;<' 9 ;F<@' C<1;' 61 <=' A @' @; I<' C< . ' >7 ; $@A' 9'<M@
+@'3<BC'B3
' C<' 9 ' 9' C<' =?<=(' ' C<' 6<9 ' DA >' 9" C<' C1 <' A .D;<A @
) @DA@' ' BAA' B3
¸ A C<1 . (' %B==<6@ ;9(' A @' < . I1<@' E' A6 <' ;< . A1 <@' C< <=' 9
) >K@DB@' ,5 .
1 ' C<' G ==<==1 ' 9' C<' ;< FC' ' C<' ;1?C ' DA >(' A @'
A9 <;' C<' F F6B=1 ' 9' A ' A; . 1= 1F<(' EC1FC' EA=' C<' <F<==A; ' F =<0
JB< F<' 9' C1=' ;<I<;=<(' C<' ;< FC' ; G=' E< ' 1 'FA . < =1
(;1661A ' =BFF<==<=' F B <;DA6A F<@' C1=' FC<F>' =B99<;<@' D ' C<' A; . 1<='
9' C<' C1 <' C<' 1 . G ; A ' ;<A ' F F6B@<@' E1 C' GA1 ' (
0 D>B<$B 'B3'<JB
< AD6<@' C<' A; . 1C=' 9' C<' + ;< <<=' A;1@' 9' C<' A;1 1 . <' H; . 1<= 9 C<'
6G=' F . . A @<@' D ' - <66<; . A ' '<99<F ' A' KB F 1 'N A @' #G=
EC< ' C<=<' 9 ;F<=' E<;<' B 1 <@' C< ' E<;<' < AD6<@' 'A==B . <' C<' 99< =1I<'
C<' DK<F ' E' EA=' D ' A' @<F1=1I<' I1F ; ' ' 9 ;F<' C<' GA==<=' 9' C<'
G< 1 <=' A @' ' 9 ;F<' +1<@ . ' ' D<' <B ;A6 ' - <66<; . A ' EA=
=BG<;=<@<@' D ' FC<;<;(' EC =<' A; . (' =CB ' 1 ' D< E<< ' C<'=<A' A @' C<
FCA1 ' 9' C<' G< 1 <=(' EA=' 9AF<@' D ' C<' +1<@ . <=<' A; . ' B @<;
661(' A @' C<' B= ;1A ' A; . ' C<' 9 ; . <;' <P < @<@' 9; .' CW F;<=' 9' C<'
G< 1 <=' ' C]' DA=1 ' 9' A (' A=' 9A;' A ' C<' =<A(' EC16=' C<' 6A <;'
FFBG1<@' C<' GG =1 <' =1@<' 9' C<' . B A1 =' EA;@=' C<' + (' A @' EA=
= ; ?6 ' < ;< FC<@' 1 ' C<' FA . G' 9' C<' < A' FC<;<;' E' A < . G <@' A'
D 6@' = ; ><' A==< A(' D ' C1=' ;@<; K' F; ==<@' C<' F;<=' 9' C<' G< 1 <='
A @' @1I1@<@' C<' E 'C = 16<' A; . 1<=(' EC16=' <; ;B;1<;'@<F<1I<@'
661' D ' A' 9<1? <@' A AF>' A @' @; I<' C<' B= ;1A =' 1 ' C<' FC<;<;' A'
DA=1 ' 9' C<' A ' ' F . G6< <' I1F ; ' EA=' C<' ;<=B6 ' [H <=

1 CA GA; 9 C>1 ?@ . C 9A < 9 C EA; (B A9 <; CA I1 ? ;<0
. A1 <@ fD; = . E<<>= A =6< %1<B B @3 ; 1= ;< B; <@ ?6A @
E1 C B CA I1 ? =< 9 C 1 < C ?61=C
96<< @;1I< AD B D F ;A; E1 @=F B6@ A99 ;@ @8 ; 1= A 1=6<
A==1= A F< C C BA =Y A @ < 9 C C G<= 1 =G1;<@
D C1= <PG<@1 1 E<; <;<A61M<@

CB= C< E1 C C <PF<G 1 9 C FC<F>=B99<;<@ D B; A; . =1 C<
A= C< <GBD61FA A; . 1<= E<; <I<; EC<; <=BFF<==9B6 1 C< F B;=< 9
2!7 C< CA@ F JB<;<@ 1 C< ; C C< EC 6< 9 66A @ A @ 1
C< = B C C< GA==A?< 9 C< G< 1 <= C< 0A < 9 A6 C< C G<=
EC1FC (;1 A A @ A < @W< CA@ 9 B @<@ C< A==1= A F< 9 ?6A @
DA@ IA 1=C<@ A LB1D<; N A @ C; << G E<; = CA@ 6A1@ @ E C<1; A; . = ,
+; B==1A 66A @ A @ GA1 C< A6 FAB=< =<< . <@ @<=G<; A < A @ 1
C1= <A; 1 CA@ A6= 6 = C< %ABGC1 C< = 9 B1= : EC CA@
Dw< G; F6A1 . <@ - 1 ? 9 ;A F< D C< A61= = A9 <; C<
= 9 SA BA; D C< 1 6< 9 B1= : C1= +;1 F< P I 11 KB <
A?<@ 6 <1?C <A; = A C< @<A C 9 C1= 9A C<; CA@ D<<
. 9; . C< A; . = 9 C1= . C<; C1= A1 . A @ C1= =1= <; A @ F 91@<@5
C< FA; < 9 A E; < FC A . <@ 1 . A A =C < . A><; D ; A@< A @ A
B ; A?< B= <GBD61FA EC B @<; C< G; < <P 9 ?1 I1 ? C< A6
F6916@ A <GBD61FA <@BFA 1 ; <A <@ C1 . E1 C B ; A?< B= A @ D; B A6
I1 6< F< C< <A; 6 @<A C 9 C1= B ? G; 1 F< EA= A ; 1DB <@ C<
F; B<6 ; <A . < C< CA@ =B99<; <@ A C< CA @= 9 C1= 9; 1?C 9B6 . A A @
> G6AF< 1 SB < 2!7 1= ; 1?C C< C; < GA==<@ C1= B F6<
B1= A 1=6A= : A I1<; B @< +; I< F< EC . C< < . 1?; A = A @
9 ;<1? G E<; = C< F<9 ; C ; <F ? 1=<@ A= - 1 ? 9 ; A F< B @<; C< 1 6<
9 B1= :

9 <; C< 9A16B; < A LB1D<; A6 C< C G<= 9 C< A61= = @<G< @<@
C< ; <AF 1 A; . I< . < A>1 ? G6AF< 1 C< 1 <; 1 ; <AF 1 A?A1 H
9 C< >1 ?@ . C1= . I< . < A 91; = ?B1@<@ D C< RYd
. @<; A < <GBD61FA = J D<FA . < = I1 6< A= D<A; F . GA; 1=
E1 C C< <I 6B 1 A; 9B; . A F; 1 . <= CA@ D<< F . . 1 <@ 1
C< A . < 9 C< I< 1 9 ; CA D @ 1 =G1 < 9 1 = 6A < G; F<<@1 ?=

I M@ +> ; @ B3 +# S>A $G@+ <B <MBA@ L@>A>+<A SMB 3B7 ; @C <M@ L7$+?$L>#
#BK>#$A< 3B7?@A $+ +RBD >+C BS@7 7$<<>+K M@ B7$ $+ B3 <M$A +> ; @ M>A $G@+
7$A@ <B G>7$BDA ADLLBA$<$B+A MD< <M@ ; BA< L7BJ>J#@ $A <M>< $< $A C@7$G@C 37B ; > 3> ; $#K B3
<M>< +> ; @ SM$?M S>A <M@ 3$7A< <B 7$A@ $+ +RBD

2"

<B9 A @ G = <@ FA G A A66 C< G;1 F1GA6 G 1 = 9 A AF> ' C< 1 =B;?< = A@IA F<@ 1 =<I<;A6 F 6B . = B @<; C< F . . A @ 9 0< <;A6= %A 1FA %BC BP A @ C< <P ?BA;@= . A A9 0< <;A6 %A 1FA =B . 0 . <@ C< I< 1 . A>< 1 = ; G= ;< 1;< A @ @1=A; 1 C< <;; ;1= = EA= = 166 @<61D<;A 1 ? C1= @< . A @ EC< C< = B @ 9 . B=>< ; A @ FA EA= C<A;@ A @ C< I< 1 GB 1 ? A < @ 1 = @<DA < CA@ =<I< CB @;<@ . B=>< = D; B?C A @ 9 ; . <@ C< . =<6I<= 1 A F ;G= 9 ;<=<;I< C< . = . B;@<; B= F 961F > G6AF< A C< + A6 A @ 1 C< B< ;W N C< A; 6<; A C<=< E G;1 F1GA6 G 1 = D; >< C< 61 <= 9 C< 1 =B;?< = A @ GB C< . 961?C =<I< 3F6 F> 1 C< <I< 1 ? C< <F 1 = A==B . <@ C< 91< =1I< ?<BJ@7 ,5 A @ E<; <I1F ;1 B= 1 <I<; @1;<F 1 <G<66< 1<; A @ ;<@BF<@ C< ;<= ;@<;

BFC EA= C< F 961F 9 C< 8 C < @W . 1A1;<&& C< EC 6< =BFF<== 9 EC1FC C< GA; 9 C< I< 1 EA= A ;1DB <@ (AGG; < C1= I1F ; < AD6<@ C< I< 1 1 . . <@1A <6 @<I < 1 = A < 1 C< 9 ; . A 1 9 C< B F16= G; G =<@ D 1 E C1;@= 9 EC1FC E<; #@?<$B+ 9 C< F =1= 9 1 = E . < . D<;= C< 91;= C1;@ EC1FC EA= $7@?<B$K 9;<<6 <6<F <@ CA@ A6;<A@ D<< . 1 A <@ D C< <AF0 1 A; GA; C< . < . D<;= 9 C< %1;<F ; E<;< FC =< A @ C< @<0 GB 1<= 9 C< I< 1 D<61<I1 ? CA 9 ;< C<1;= 1I 1 <;<= = C< ;<?1F1@<= =C B6@ D< A C< C<A@ 9 C< 0 I<; . < . 1 A <@ A W I<166]9< <G<ABP 1<]= <ED<6 < B; <B; A @ (A;;A= 1] <= ;<9B=<@ AF A @ A; EA= <6<F <@ 1 C1= G6AF< . . <@1A <6 A9 <; F #w f # C1= C< I< 1 @<F6A;<@ 1 = =<==1 A A < @ A9 <; 1 <BJ@7 ,5 61A@ CA@ C;<< <A;= 1 <P1= < F< 9; . C< = <G < . D<; 2! C< C F D<; 2!7 a C (;B . A1;< <A; 6 b C = EC < @<AI B; KB= 19 C1= ==< . D6 A66<?< 1 1 = @<9< F< C< @A ?<; EC1FC C< F B ; EA= <PG =<@ A @ C< = <; <F<==1 1<= 9 @1< . . < DB EC< 1 F . . < F<@ 1 = =1 1 ?= C< FA . GA1? 9 ;? < A @ C< FA A@< 9 AC CA@ =AI<@ C< <GBD61F N C< +;B==1A = CA@ D<< GB 961?C A @ C< ;< FC A; . = E<;< I1F ;1 B= A66 C< 9; 1<;= N A @ C< DA 6< 9 S< . AGG<= G;<F<@<@ D E . C= C< = SA BA; C< I< 1 EA= C< . = F;B<6 A @ ;A 1FA6 9 A66 C< ? I<; . < =

E FC‘ CA@‘ F;B=C<@‘ ;A F<‘ ‘CA@‘ ‘@ BD‘ ‘F < @‘E1 C‘ 1 B . <0 ;AD6‘< < . 1<=‘ DB ‘1 ‘CA@‘ A; B=<@‘ C< . ‘ A?A1 = ‘ 1 =<69‘ D ‘1 =‘ . 1=? I<; ‘ . < ‘A @‘19‘1 ‘9 1 . @‘1 =<69‘ F . G<66<@‘ ‘CAI‘< ;<F B;=‘< ‘ <;; ;1= . ‘ 9 ;‘ C‘< GB;G =‘< 9‘C 6@1 ?‘ C<1;‘ < < . 1<=‘ 1 ‘ FC<F>‘ 1 ‘ EA=‘ 6 ‘D<FAB=‘< C‘< F;1 . 1 A6‘ @<<@=‘ EC1FC‘ 1 ‘CA@‘ G<; . 1 <@‘ CA@‘ <PF1 <@‘ B 1I<;=A6‘ 1 @1? A 1 ‘ A @‘ F . G; . 1=<@‘ C‘< FAB=‘< 9‘ C‘< <I 6B 1 ‘<I< ‘1 ‘ C‘< < <=‘ 9‘1 =‘ . = ‘ < CB=1A= 1F‘ GA; 1=A =

+ ' ; I

) ' ') ' ' ' ' ' ' ' ') 0

)

UF #' - @ f 2!7' aN #' ? !' Y ' 9 [!' ' 2y2' - @ f 2!2'
aUW #' 9 !' ' 9 [

* +' %1;<F ;=' E<;<' A66f E1 C' C<' <PF<G 1 ' 9' A; f 9' . @<;A <'
FAGAF1 f A @' F FB; ;<@' 1 ' ;< @<;1 ?' C<1;' E ' G =1 1 ' C<
D<' %1;<F ; f . ;<' @1991FB6 ' ' C1=' G<;1 @' C<;<' EA=' ' <6< . < ' 9' ;@<;' y
= ?<BJ@7 8 8 J'
%1= ;<A=' 9' Ç<' ;' ? L' ? I<; . < ' 4 .' C<' <GBD61F' A A;FC ' A @' B <A=1
0 I<; . < f # f <=' <I<; EC<;<' G;<I A16<@f 9A . 1 <f CA@' D<F . <' FC; 1Ff
C<' ; G=' E<;<' E1 C B ' F6 C<=f G; I1=1 =f ;' C ;=<=' N C<' I< 1 '
CA@' =G< 'A ' 1 . . < =<' FAG1 A6' ;<G;<=< <@' D ' A==1? A =f A @' CA@' = 6@'A6 . = '
CA69' 9' C<' <GBD61FA ' <; ;1 ; f D<6 ?1 ?' ' C<' G; =F;1D<@Y' F6A==<=f 9 ;'
C<' GB;G =<' 9' G; I1@1 ?' 9 ;' C<' =BGG ; ' 9' C<' G< G6<' A @' C<' A; . 1<=' N
C<' <PF<==1I<' @<?;<<' 9' @1=F;<@1 ' ' EC1FC' GAG<;' . < ' CA@' 9A66< f A9 <;'
C<' 1==B<' 9' C1; <1?C ' C B=A @' . 1661 =f CA@' @<= ; <@' A66' F 910
@< F<' A @' A66' 6<?1 1 . A <' F . . <;F<' N C<' ;<A=B; ' EA=' < . G f C<
0 I<; . < ' F B;1<;=' E<;<' 91;<JB< 6 ' B AD6<' ' ? ' ' C<1;' . 1==1 =' 9 ;'
EA ' 9' . < f A @' 91 A66 f =BFC' EA=' C<' ?< <;A6' G I<; f CA ' EC< ' C<
%1;<F ;=' < <;<@' C<' GA6AF<' EC1FC' CA@' D<< ' A==1? <@' ' C< . ' A=' A'
@E<661 ?f C< ' 9 B @' ' 9B; 1 B;<' C<;<f A @' E<;<' F . G<66<@' ' D ;; E' 9'
C<' G ; <;' A' 9<E' = ;AE' FCA1;=' A @' A' E @< ' AD6<f ' C<' 6A <;' 9' EC1FC'
C< ' @;<E' BG' C<' @<F;<<' D ' EC1FC' C< ' E<;<' AGG 1 <@' ' 991F<
C<1;' 91;= ' FA;<' EA=' ' <= AD61=C' C<1;' G E<;f A @' C< ' =BFF<<@<@' 1 '
$7A<' >?<A' B3'<M@' f' 91AB>6 ' 9 66 E1 ?' A ' 91;=' C<' ;B6<=' 6A1@' @ E
$7@?<B7A ' &TR ' = 1 B 1 ' ' A' =C ; ' 1 . <' 1 @B= ; ' A @' F . 0
. <;F<' D<?A ' ' ;A1=<' C<1;' C<A@=f C<' =BGG6 ' 9' G; I1=1 =' D<FA . <' 6<0
;AD6 ' ADB @A f A @' C<' F6BD=' E<;<' ADA @ <@' 9 ;' C<' E ;>=C G=' A @'
C<' 91<6@=' C<' %1;<F ; ' <P<; <@' 1 =<69' ' ;<I1I<' A?;1FB6 B;<f 1 @B= 1 1

A @' C<' A; =(' ;< <= AD61=C<@' C<' GBD61F' <PC1D1 1 =(' A @' 9 B @<@' G;1 . A; (
F< ;A6(' A @' ; . A6' =FC 6=' <' 9' 1 =' . < . D<;=(' - <I<166 ;< <GABP(
< ;B= <@' E1 C' CA ' G ; 1 ' 9' C<' ? I<; . < ' 9' C<' A 1 ' EC1FC
;<6A <@' ' . ;A61 (' A < . G <@' ' 9 B @' A' @1= 1 F ' E ;=C1G' K#K GK#KA
@<;' C<' A . <' 9' [' C< GC16A C; G (' DB ' C1=' <99 ; =' 1
C1=' @1;<F 1 ' E<;<' ;1@1FB6<@' A @' 9<66' ' C<' ?; B @' C1=(G<;1 @' EA=
@1= 1 ?B1=C<@' D ' A' ?1 <A ' 61F< 1 B= <==' 1 ' . A <;=' C<' E<A6 C ' F6A==<=
EC ' CA@' D<< ' = ' 6 ?' 9 ;F<@1 ' ;< 1;< . < ' D ' C<' <1? ' 9' <;; ;(' E
?AI<' C< . =<6I<=' BG' ' C<' GB;=B1 ' 9' G6<A=B;<' E1 C B ' = 1 (' A @' 1 @B6?<@
1 ' A' F B;=<' 9' B D;1@6<@' 6BPB; (' EC1FC' EA=' B EA;@6 ' @1=G6A <@' 1 ' DA66=(
9<= 1I1 1<=(' ;1FC' F = B . <=(' A @' =B . G B B=' <JB1GA?<=' (A;;A=(' EC ' EA=' A
(' A ' 9' G6<A=B;<(' 9AI B;<@' C1=' @A ?<; B=' =1? ' 9' C<' ;<AF 1 (' A @' C1=
GA6AF<' = ' D<FA . <' C<' ;< @<MI B=' 9' C<' . = ' 9;1I 6 B=' A @' F ;;BG
= F1< ' ' =G1 <' 9' C1=(' C E<I<;(' C<' E<A6 C ' F6A==<=' E<;<' = 6' C<
I1F 1 . =(' B @<;' C<' ? I<; . < ' 9' C<' %1;<F ; (' 9' I1 6< ' A @' =G 61A 1I<
. <A=B;<=' C<' <F<==1 1<=' 9' C<' <GBD61F' E<;<' = ' IA= ' A @' 1 . G<;1 B=(
CA ' ' . << ' C< . ' C<' 0 I<; . < ' CA@' ;<F B;=<' 9 ;F<@
6 A =(' A @' ' ' <;;1 ;1A6' <@1F =(' C<' 6A <;' 9' EC1FC' E<;< B7?@C'#B>+>
' D<' < . G6 <@' 9 ;' C<' GB;G =<' 9' E1 C@;AE1 ?' C<' A==1? A =' 9; .' F1;FB0
6A 1 ' ' C<' =FA6<' 9' C1; ' ' <(' A @' ' D;1 ?' FA=C' 1 ' F1;FB6A 1 '
C< ' G ==<==<@' C<' A@IA A?<' 9' D<1 ?' 1 . . <@1A <6 ' <PFCA ?<AD6<' 9 ;' C<'
A 1 A6' @ . A1 =' EC1FC' C< ' ;<G;<=< <@(' A @' 9B; 1=C<@' C<' 0 I<; . < '
E1 C' A' < . G ;A; ' ;<= B;F<' (B ' C< ' =BD=<JB< 6 ' 9< ' 1 ' @1=F;<@1 (
A @' F @BF<@' ' A' G; @1?1 B=' DA >;BG F ' 9' C1; C;<<' C B=A @'
. 1661 =

_ C<' EA;' 1 ' C<' <= ' EA=' E' 6 ' FA; ;1<@' ' D ' A' 9<E' 6<A@<;=(' C<'
FC1<9' 9' EC . (' CA;< <' A @' 996< (' E<;<' E<A>< <@' D
C<1;' EA ' 9' CA; . #' ' C1=' F ' FA . GA1? ' FC<' 9 A' < @1<(A@?B+C' S>7
@1=G6A <@' A' ?;<A ' A . B ' 9' AD161 ' <GA;A 1 ?' C<' ,5E ,5
A61= ' 9; .' C<' ;<61?1 B=' FAB=<(' C<' <B ;A61M<@' C<' 1 96B< F<' 9' C<'
G;1<= =(' A @' C<' . A==<=' 9' C<' G GB6A 1 ' ' 6 ?<;' ;<=G @<@' ' C<'
GG<A6=' 9' C<1;' . 161 A; ' FC1<9=' FC<' IA JB1=C<@' CA;< <(' A @' >'
C1 . ' G;1= <;N' A @' 996<' EA=' = ' A9 <;' ?1I< ' BG' ' C<' ?g<F<= 9
<GBD61FA =' D ' ;<AFC<; ' C<' C<; 1= .' 9' <AFC' 9' C< .' FCA;< <#.@Y'
A=' . A1 A1 <@' A ' C<' C B;' 9' @<A C(' EC1FC' >' G6AF<' 1 '
C<' FA=<' 9' CA;< <' A ' A <=(' A @' 1 ' CA ' 9' 996<' A ' ?<;=' 0< ;?<='
A@ B@A6' = 166' ><G ' C<' 91<6@' 1 ' ;D1CA (' DB ' FC<' = ' F;B=C<@' C1='
' + '

<E'9 FB=' 9'1 =B;;<F 1 'D '@1;<F 1 ?'A?A1 ='1 'A66'D1='9 ;F<='N A @'A9 <;' C1=' . =' 9' C<'1 =B;;<F 1 A; '6<A@<;='6A1@'@ E ' C<1;'A; .='A @'=B?C' A';<9B?<'1 ' ?6A @

C<'%1;<F ; '1 '+A;1='EA=' E' C<' DK<F' 9' C<' . ='I1 6< '@<. ' F;A 1F'A @; A61='A AF>=' =' . < . D<;=@' EC 'CA@' A>< 'A'GA; '1 'A ' C< <PF<==<=' 9' C<' I< 1 'A @' C<'<I< =' 9' C<' . C' 9' C<; . 1@ ;@' E<;<'CW6@'1 '<JBA6' C ;; ;' D ' C<' E ' GG =<@'GA; 1<=@'A @'D 'A ' C =<' EC ' =CA;<@'1 ' C<' ;<AF 1 A; '=< 1 . < =' EC1FC' E<;<' E'<I<; EC<;<' D<F .1 ?'G;<@ .1 A ' C<'%1;<F ; '1 ' C<'91 ='G6AF<' >'G; F<<@1 ?=' A?A1 =' C<'%<. F;A =@' EC ' CA@' G< <@'A' F6BD'1 ' C<'+A C< ' '

M@'L#B<'B3' C1 A 1F@' <. B6 B=' 9' D<=G1<;;<@' A. <@'O;AFFCB=' (AD<B9@' >J@D3' G; F6A1. <@'C1. =<69' ;1DB <' 9' C<'G< G6<@' < @<A0 I B;<@' '<PF1 <' C<'G GB6AF<'D '@<. A @1 ?'A 'A?;A;1A ' 6AE@' A @'G; 0 . 1=1 ?' '<= AD61=C' 1. 1I<;=A6'CAGG1 <==' D ' . <A =' 9'61D<; @' <JI . 61 @' A @' C<' = 1 B 1 ' 9' 2!8' C<#F =G1;A ;='?A1 <@' I<;' ' C<1;'=1@<' C< G 61F<@' A. G<;<@'E1 C' C<' ; G='1 ' C<' FA. G' 9' O;< <66<@' A @'E<;<' ' C<'G 1 ' 9' . A;FC1 ?'A?A1 =' C<' B F16='A @' NC<'%1;<F ; @' EC< ' C< ' E<;<'D< ;A <@' A @' =<1M<@'1 '5 C<1;'G6AF<' 9' . << 1 ?'N O;AFFCB=' (AD<B9' GA 1 ?' C<'G< A6 ' 9' C1=' 619<' 9 ;' C1=' @<=G<;A <' < <;G;1=<' '@1= B;0 DA F<' >'G6AF<'A ' C<' =A. <' 1. <'1 ' C<' FA. G' 9' O;< <66<@' EC1FC' EA=' FC<F><@' D ' A1 @' C<' 991F<;' 1 ' F . . A @' 1=' @;A? =' =AD;<@' C< 1 =B;?< =@' A @' C<' %1;<F ; ' CA@' C<' ;1 ?6<A@<;=' ;1<@' D 'A' . 161 A; ' (#A11=' B' F . . 1==1 ' ' A61=' F =G1;AF 'EA=' A ' C<' =A. <' 1. <' BL$7>?K' 9 ; . <@' D ' C<' DDW' (; C1<;'A @' AI1 <C<B; 1='N DB ' CA 61><E1=<' 9A16<@@' A @' 1 =' AB C ;=@' ' D<1 ?' 9 1. @' ?B16 @' E<;<' 6< 1< 6 ' @<A6 ' E1 C' D ' C<1;'KB@?<=@' EC ' CA@' D<< ' <6<F <@' B @<;' C<'1 96B< F<' 9' C]' 1 =B;;<F 1 A; ' . I<. < ' 9' < @W. 1A1;<' ' = ;B??6<' C< ' >' G6AF<' D< E<< ' C<' %1;<F ; ' A @' C<' AB C ;1 1<='EC ' CA@' D<< ' 9;<<6 ' . 1 A <@' D ' C<' =<F 1 =N' A @' C<' 9 ; . <;@' 91 @1 ?' C<. =<6I<=' I<;F . <' D ' C<' <6<F ;A6' G E<;@' CA@' ;<F . =<' ' . 161 A; ' 9 ;F<@' A @' ?AI<' C<' @A ?<; B=' <PA. G6<' 9' A66 E1 ?'1 ' ' 1 <;9<;<'1 ' A <' G 61 1F=

' C1=' <A;@' A?A1 @' C<'3?6 ; ' 9' ;A F<' EA=' = 6<6 ' =BGG ; <@' D '1 =' A; . 1<='J A; ' CA@'9 ; . <@' A' G6A ' 9' FA. GA1? '1 'AFF ;0 @A F<'E1 C' EC1FC' C<' A; . 1<=' 9' C<' C1 <@' 9' C<' A. D;<' A @' <B=<@' A @' 9' A6 @' . 1?C ' . A;FC' BG ' 1< A' 1 ' F F<; @' A @' A99 ;@' <AFC' C<;' . B ;1AZ' =BGG ; ' C<' E ' 91;=' E<;<

$; ; B7< $' ?> ; L>$ +A' B3' ,5 '>+C' ,5 5<' >7+B<A' L#>+

F . . A @<@ D ' ?< <;A6=' EC ' E<;< A6;<A@ ' F<6<D;A <@ , ' ;<AB A @ S B;@A ' C< C1;@ EA=' < ;B= <@ ' C< B ?' C<; ' 9 B6 ' A @ @<9< @<;' 9 C< I< 1 '1 ' < @W . 1A1;< , # AG 6< (AGA; <' =' 6A <;' A; . @<I 1@ A=' 1 ' EA=' 9 / ' 9 EA;9 @ A @ ;A1 . < CA@ ' D<< ' AD6< ' A>< A@IA A?< 9 1 =' I1F ; ' 9 A A @ 9 B @ 1 =<69 1 ' C< =G;1 ?' 9 2!*1 '9; ' 9 C< B= ;1A =' B @<;' (<AB61<B A @ C< +1<@ . <=< . @<;' 661 1 ' A =1 BA 1 ' =1 . 16A;' ' CA ' EC1FC 1 ' CA@ FFBG1<@ 1 ' C< G;<I1 B=' <A;' D<9 ;< 1 =' I1F ; ' 661 FFBG1<@ 1 ' C< < ;< FC<@ FA . G 9 <IA C< =1@< 9 C< G< 1 <=' 1 " C< @1;<F 1 ' 9 C< + 'N A @ (<AB61<B3=' ; G= <P < @<@ 9; .' C< IA66< ' 9 C< (; . 1@A A @ C< 61166 9 < < ' C< =<A 1 <;F<G <@ C< ; A@ ' 0< A

(AGA; < A; ;1I<@ ' C< 2 C A;FC A ' C1=' C<A@ JBA; <;=' A ' 1F< EC<;< C< 9 B @ C< A; . '@<= 1 B < 9 <I<; ' <F<==A; DB

; ?' ; '1 =' F B;A?< A @ <PG<;1< F<' ' C< = 6@1<;=' 1' C1=' 77$G>#B3 B+>L>7<@>< <M@ <>#$>+ >7 ; K A; . 'CA@ D<F . < CA;@< <@ 1 ' C< ?1?A 1F F 961F =' EC1FC 2#) >7?M 'CA@ A>< ' G6AF< 1 ' C< 6G=' A @ + ;< <<= A @ C< 'E<;<

F . . A @<@ D ' A==< A B?<;<AB A' A;G< <;;B;1<; 1B A A @ S BD<; ' C< 91;= ' E ;@=' EC1FC C< B ?' ?< <;A6 A@@;<==<@ ' C< . ' E<;< A' G;<=A?< 9 I1F ; ' [6@1<;=N C< =A1@ [B' A;< 166 9<@ A @ A6 . =' A><@ ' C< 0 I<; . < ' E<=' B' . BFC DB ' FA ' @ ' C1 ?' 9 ;' B' B;' GA 1< F< A @ F B;A?< @ ' B' C B;' DB ' D A1 ' 9 ;' B' <1 C<;' A@IA A?< ;' ?6 ; ' ' E166 E' 6<A@ B' ' C< . =' 9<; 16< 91<6@=' 1 ' C< E ;6@N EC<;< B' E166 91 @ ?;<A ' F1 1<= ;1FC G; I1 F<= C B;' ?6 ; ' A @ ;1FC<=' 6@1<;=' 9 A6 ' Z CAI< B' C< F B;A?< ' 9 66 E' . < c N (AGA; <' EC Q CA@ DB ' C1; =1P C B=A @ . < ' E1 C EC1FC ' . << ' =1P ' C B=A @' G<;F<1I<@ A=' C1=' G;<@<F<== ;' CA@ CA '1 ' A=' 91;=' 9 A66 <F<==A; ' ' =<GA;A < C< +1<@ . <=< 9; .' C< B= ;1A =' A @ ' F;B=C C< . ' < A9 <;' C< C<;' < FA;;1<@ C1=' C<A@ JBA; <;=' ' AI A' A @ C;<E' C< @1I1=1 ' A' A;G< BG ' C< =<A F A= ' 9 ;' C< GB;G =< 9 @1;<F 1 ?' C< < < . 3= <99 ; =' ' CA ' =1@<N DB ' EC16=' C< B= ;1A ' 6<9 ' A@IA F<@ A?A1 =' A' A;G<' C<1;' F< ;< A@IA F<@ A?A1 =' C< ;< FC A; . ' D ' C< C1 ' 9 < <' E<6I< CB @;<@ . < ' 6 ' @<;' 6 <6 A . G ' FFBG1<@ C< GA=' C<;<N A . G ' =AE' C< G<;16 ' EC1FC C< A; . ' E B6@ D< <PG =<@ 19 CA ' G =1 1 ' E<;< 9 ;F<@' A @' C; E1 ?' C1 . =<69 E1 C C1=' D;AI< F . ;A@<=' 1 ' A ' 6@ ;<@ BD ' . A@< C< . ' =E<A;' CA ' 61< ' E B6@ @1< ;A C<;' CA ' =B; ;< @<;' A @ C;1F< ;<

2* ! > - ' #' 8 ! ' : >' ' 8 -'

GB6=<F6 C< EC 6< 9 ;F< 9 C< B= ;1A ' 1 9A ; 'N CB=' A99 ;@1 ?' 1 . < '
C< ;< FC @1I1=1 =' ' A;;1I<' (AGA; < 1 . . <@1A <6 '
C;<E' DAF>' C1=' ;1?C (EC1FC C< . A;FC<@ BG ' < <
<E+B<<L ' 8M
) $##@A$; B '>+C; 1 ' 9; ' 9 C< < < . (EC16=' C< @1I1=1 ' A==<, A(D '
) B+CBG$ ' ,5
B; 1 ?' C< F;<=' 9 ' C< G< 1 <=(. 1?C ' =B;G;1=<' C< .
1 ' C< ;<A;' 1=' ;@<;=' E<;< <P<FB <@N C< B= ;1A =(A AF><@ A @
=B;G;1=<@(9<66 DAF>' 1 ' @1= ;@<;(A @ (AGA; <(. # <;' 9 C< GA==" A @
C< F;<=' 9 C< G< 1 <=(E' CA@' 1 ' 9; ' 9 C1 . ' C< B= ;1A =(EC
;A661<@ A ' %<? ' A @ ?BA;@<@ C< ; A@ ' . DA;@ (A @ ' C1=' 6<9 ' C<
+1<@ . <=<(EC ' FFBG1<@ C< 9 ; . 1@AD6< ? ;?<=' 9 166<=1 . (C< IA66<
9 C< (; . 1@A(A @ 1 <;F<G <@ C< ; A@ ' +1<@ . ' 6<==' '= . <
@<F1=1I< D6 E' F B6@ D< 1 961F <@ ' C< E ' A; . 1<=' C< 9 11 =' 9 C<
I1F ; ' 9 < < E B6@ D< 6 = (A @ ' C< . ;; E' C< F 961F
EA=' ;<=B . <@ ' _ A' APG< A @ A==< A' A AF><@ C< B= ;1A =' A ' %<? (
EC16=' B?<;<AB' 1 . G< B B=6 ' G< < ;A <@ C< ? ;?<=' 9 166<=1 . ' C<
6A <;' =<GA;A <@ +; I<;I(EC ' @<9< @<@ C< . (9; .' C< +1<@ . <=<
A; . (A @ @; I< C1 . ' DAF>' 1 ' A' 9 ; (1 ' EC1FC A9 <;' A' @<=G<;A <
F 961F ' 9 E ' @A =(C< A @ 919 << ' C; . @;<@ 1 < ' I<;<' ;F<@ ' 6A
@ I ' C<1;' A; . =' C< @<916< EA=' E' FA;;1<@(61< B= ;1A ' A; .
EA=' 1 ' 961?C ' ' C< ; A@ ' 16A (A @ C< +1<@ . <=< ;< ;<A <@ BG
@ I1

(AGA; <(;1F ;1 B=' A ' <I<; ' G 1 (CA@' ?A1 <@ C;<< I1F ;1<=' 1 ' C;<<
@A =(A @ 9166<@ C1=' A; . ' I1 C A= 1=C . < ' A @ A@ . 1;A 1 ' ; .' C<
C<1?C =' 9 C< G< 1 <=' C< F < . G6A <@ E1 C < . 1 ' C< ;1FC G6A1 =' 9
+1<@ . ' A @ A6 (EA <;<@ D ' = ' . A ' D<AB 19B6 ;1I<;=' <' G 1 <@
C< . ' B ' ' C1=' = 6@1<;=' A=' A C<;' G; . 1=<@ 6A @(A @ F;1<@ [' A 1DA6
F; ==<@ C< 6G=' N A @ E<(E< CA I<' B; <@ C< . ' z ^ C< IC 6< G6A ' 9 C<
FA . GA1? ' 1=' F . G;<==<@ 1 ' C<=< E ;@=' C< I1F ;' E' E< ' 1 ' GB;=B1 '
9 C< +1<@ . <=<(A @ EA=' A?A1 ' I1F ;1 B=' A ' @ I1(A9 <;' EC1FC C<
;<AFC<@ C<;A=1A(A ' 1 . G ; A ' G =1 1 ' A ' C< F 96B< F< 9 C< A A; '
A @ C< B;A(A @ C;<A < <@ B;1 (9; .' EC1FC C< EA=' 6 '@1= A ' < '
6<A?B<=' - 1 ?' 1F ;' . A@<B=(1 ' 9<A;' 9 ;' C1=' FAG1 A6 A @' C1=' F; E (;'
M@ 7 ; $A<$?@' B3' Y@< 99<;=' 9' G<AF<(A @ (AGA; < =1? <@' A ' A; . 1= 1F< D '
+11 (EC1FC C< EA=' GB ' 1 ' G ==<==1 ' 9 1(; A(A @ 6<P '
A @;1A(E1 C 6 < 1 . < =< . A?AM1 <=' EC1FC C< ' F A1 <@(
EC16=' C< G;<=<; I<@' C1=' F . . B 1FA 1 =' E1 C ;A F<' B . <; B=' 96A?=H
919 91I< G1<F<=' 9' A; 6<; (91I< I1F ;1<=((919 << ' C B=A @' G;1= <;=(<+

C B=A @' 9' C<' < < . ' >166<@' ;' E B @<@&' A @' G<AF<' E1 C' +1<@ . &'
E<;<' C<'K;<=B6 =' 9'A' FA . GA1? ' 9' 919 << ' @A =' +A;1=' EA=' < CB=1A= 1F' A'
C<' <E=&' A @' C<' E ' B F16=' I <@' CA ' C<'A; . ' 9' A6 'CA@' @<=<; I<@'
<66' 9'1 =' F B ;

(AGA; <' 9 66 E<@' BG' C1=' =BFF<==' <' @<F<1I<@' (<AB61<B' D ' 9<1? <@'
. A BI;<=&' F; ==<@' C<'+ &' A @' 6A1@' C<'%B><' 9'+A; . A' B @<;'F ;1DB0
1 ' . DA;@ ' EA=' D<9 ;' C1 . ' A @' F B6@' ' DB ' =BD . 1 &' DB ' 1 ' EA='
91;=' <F<==A; ' ' F . G6< <' C<' @<9<A ' 9' (<AB61<B&' A @' 9 ;' C1=' GB;G =<'
C<' < @<AI B;<@' ' FB ' 1 ' E ' D1=' A; . &' A' G ; 1 ' 9'EC1FC' FFBG1<@' @1'
' C<' @@A ' <' . A;FC<@' ;AG1@6 ' A?A1 =' C1=' G6AF<' A @'
>'1 ' C<' B= ;1A =' 9<66' DAF>'BG ' C<' GG =1 <' DA >&' A @'
&@<9< @<@' C<' D;1@?<' EC1FC' C< ' S1A@' F; ==<@&' E1 C' E<6I<' #
C B=A @' 1 9A ; &' 9 B;' C B=A @' FAIA6; &' A @' A' 9 ; . 1@AD6<' A; 166<; '
BFC' A ' D= AF6<' A=' C1=' AGG<A;<@' ' D<' 1 =B; . B AD6<&' DB ' C<' B ?'
0< <;A6' 1 =G1;<@' E1 C' C1=' E ' A;@ B;' =1P' C B=A @' ?;< A@1<;=' EC . '
C<'9 ; . <@'1 ' A' F 6B . ' A @' C;<E' BG ' C<' D;1@?<&' C; B?C' A' = ; . ' 9'
; B @'=C ' A @' . B=>< ; &' EC16=' C<' FAIA6; '9 ;@<@' C<' ;1I<;' AD I<' @1'
A @' A AF><@' C<' B= ;1A =' 1 ' C<' ;<A;' C<' 6A <;' 96<@'1 ' @1= ;@<;&' A @'
C< F<9 ; C' C<' A; . ' 9' A6 ' EA=' 1 I1 F1D6<' (<AB61<B' ;< ;<A <@&'
6<AI1 ?' D<C1 @' C1 . ' ;< . A&' 16A &' +AI1A&' . &' A @' 4' ' &
A==A &' EC1FC' C<' ;< FC' < <;<@' (AGA; <' 1 . . <@1A <6 '
=<1M<@' C<'1 . G ; A '61 <' 9' C<' @1?<&' A' ;1I<;' EC1FC' 1==B<=' 5#RYH'] '
9; .' C<' C< 1A ' 6G=&' 9A66=' 1 ' C<' @;1A 1F&' A @' G; <F =' . DA;@ '
A?A1 =' B= ;1A'N A @' C< ' ;< ;AF<@' C1=' = <G=' ' ;<F<1I<' =BD . 1==1 ' 9'
0< A' A @' 9' <;F 6<=' @3 = <&' %B><' 9' @< A&' EC '
?AI<' C1 . ' < ' . 1661 =&' A @' E1 C@;<E' ' < 1F<' 0< <;A6' ! @+B>') BC@+>'
ABD 1=' >' <?C ; &'1 ' EC1FC' E<;<' =1P' CB @;<@' ;=1FA ' B ; @' (@GB#<'$+'
9B?1 1I<=&' EC .' (AGA; <' =< ' ' C<1;' E '1=6A @' ' . A><'
';<I 6 ' A?A1 =' C<' ?61=C ' C< ' @1@' = &' A @' C<' ?61=C' E<;<' @;1I< '
EA
C<' B;' 9' AG6<=&' ;B6<@' D ' LB<< ' A; 61 <&' C<' =1= <;' 9' C<'
9 ; B A <' A;1<' 1 < <&' A @' 1 =G1;<@' E1 C' C<' . = 'D1 <;' CA ;<@'
?A1 =' ;A F<&' CA@' F . . < F<@' 9 ; . 1@AD6<' G;<GA;A 1 =' 9 ;' EA;&' DB ' 1 '
;< . D6<@' A ' C<' <E=' 9' (AGA; <3=' I1F ;1<=&' A @' ;<=1? <@' 1 =<69' ' <B0
;A61 ' C<' + G<' C1 . =<69' EA=' F . G<66<@' ' =BD . 1 &' A @' (AGA; <'
6<I1<@' BG ' C1 . &' A=' A' F ;1DB 1 ' 9' G<AF<&' E< <' . 1661 =&' A @' A'
CB @;<@' 9' C<' . = '9A . B=' E ;>=' 9'A; '1 ' C1=' . B=<B . =

' C<' . <A 1 . <' C<' B= ;1A =' CA@' . A@<' '9;<=C'<99 ; (' A @' C<' ;FC@B><'
CA;6<=(' C<' . G<; ;3='D; C<;(' . A;FC<@' EA;@=' C<' C1 <'A '
) BG@ ; @+<A' B3' C<' C<A@' 9'=<I< ' C B=A @' . < ' G ' C1=(' 1 'AFF ;@A F<'
<M@'>7 ; $@A' B3'
<M@' J$+@' >+C'
<M@' > ; J7@' >+C' E1 C' A; 3='G6A (' C<'A; . 1<=' 9' C<' C1 <'A @' A . D;<'A @'
) @+A@'$+' ! @7 ; >+R ' ,5 F <B=<(' F . . A @<@'D ' ;<AB'A @'S B;@A (' . I<@'9 ;EA;@'
1 'F F<; (' A @'F; ==<@' C<' ;1I<;' E1 C' C<' DK<F ' 9' =B;0
; B @1 ?' C<' < < . (' A @' C< ' . A;FC1 ?' 1 ' F F<; ' . C' C<' A; . ' 9'
A6 'BG ' 61<' F< ;<' 9' C<' B= ;1A ' . A;FC ' C<' < ; . B=' @1=0
A F<' EC1FC' =<GA;A <@' C<' E 'A; . 1<=(' 9'EC1FC' C<' <'<99<F <@' C<'GA=0
=A?<' 9' C<' ;1I<;' A '%r==<6@ ;9(' A @' C<' C<;' A ' ;A=DB;?(' C<' 1 . . < =<'
=GAF<' EC1FC' E B6@' =<GA;A <'<AFC' 9' C< . '9; . '1 =' DA=1=' 9' G<;A 1 =(' A @'
C<' D= AF6<=' EC1FC' C< 'F B6@' '9A16' '< F B <;'1 'A' @1991FB6 'A @' C = 16o'
F B ; (' ;< @<;<@' C1=' G6A ' A ' <P ;< . <6 ' CAMA;@ B=' <' A @' < ' A '
91;=' 1 ' AGG<A;<@' '=BFF<<@' ;<AB' ?AI<' DA 6<' ' C<'
$?<B7K'B3') B1 7@>D'>' >A<>C< ;FC@B><' CA;6<=' A ' A= A@ (' D< E<< ' C<' C1 <'A @' C<'
(6AF>' B A1 =' C<' I1F ; ' EA=' = AB FC6 ' @1=GB <@' ' <1 C<;' =1@<(' DB ' A '6< ? C' C<' ;< FC'CAI1 ?' D A1 <@'G ==<==1 ' 9' C<'C<1?C =' A @'
C<' GA==<=' 1 ' C<' IA66< ' 9' C<' <F><;(' C<' ;FC@B><" 9<A;<@' 6<=' C<'
=C B6@'D<' =<GA;A <@'9; . ' C<' C<;<@1 A; ' A <=' 9' C<' B= ;1A ' . A;FC (
A @'9 ;' C<'GB;G =<' 9' F I<;1 ?' C< . '9<66'DAF>'CA= 16 'BG ' C<'%A BD<'
<< 1I' 9' C<' # . ' @' A 1=D (' A66 E1 ?' ;<AB' ' . A;FC
FCE =' ' C<' A?A1 = ' C1 . ' D ' C<' IA66< ' 9' C<' <F><;(' A @' S B;@A ' D '
% BD<YQ^Y CA ' 9' C<' A1 (' A @' C< (' EA;@=' C<' . 1@@6<' 9' C<' <A;'
2 ! *(' C<' ;< FC'A; . 1<=(' . A= <;=' 9' A6 (' A @' 9'CA69' 9'
O<; . A 'A=' 9A;'A=' C<'%A BD<(' C;<A < <@' '1 IA@<' C<' ;<=
C<' 6@' B= ;1A ' O< <;A6' B; . =<;' E' ;< < <;<@' C<' ; 6' A ' C<'
C<A@' 9'A' <E' A @' 9 ; . 1@AD6<'A; . ' 9'=1P ' C B=A @' . < (
F @+<7K'B3'<M@' A @' G;<GA;<@' ' 9 ;F<' C<'61 <=' 9' C<' @1?<(' ';A1=<' C<'
BA<7$>+A' D+C@7' D7 ; A@7' $+<B' <M@' K7B#' >+C' D6 F>A@<' 9' A BA(' A @' 'F;B=C' C<' ;< FC'A; . ' 9' A6 (
B ; J>7CK ' ,5 EC1FC' EA=' 6 'CA69'A=' = ; ?' A=' C1=' (' A @' EC1FC' EA='
=CB 'BG' 1 'A' A; ; E' =GAF<' D< E<< ' C<' A><' 9' OA;@A' ' C<' ; 61(' C<'
@1?<' ' C<' <A= (' A @' C<' + ' ' C<' = B C' B; . =<;' CA@' C<' FC 1F<' 9'
C;<<' ; B <=' C<' 91;=' F; ==<@' C<' @1?<' A ' I<;<@ (' AD I<' C<' A><' 9'
OA;@A(' A @' B; 1 ?' D<C1 @' CA ' 6A><' 9 66 E<@' 1 =' E<= <; ' =C ;<(' EC<;<'
C<' 6 '(' D= AF6<' C<' E B6@' CAI<' ' I<;F . <' E B6@'D<' C<' . 161 A; 'G =10
1 ' 9' A6 ' C<' =<F @' ; B <' GA==<@' D< E<< ' C<' 6A><' A @' C<' @1?<('
A6 ?' C<' C<1?C =' 9' <DA6@ (' EC1FC}=<GA;A <@' C< . ' A @' @<9< @<@

C<'1 . G ; A 'G =1 1 =' 9' ; A'A @' 1I 61M A @' <' C1;@&'9 66 E1 ?' 61<
6<9 'DA >' 9' C<' @1?<&' ;A '1 ' C<' G6A1 '1 ' C<' @1;<F 1 ' 9' <; A&'A @'
6<@' ' B;'61 <' 9' @<9< F<=' C<' A; . ' 9' A6 'CA@' <I<;'9 B @'1 =<69'1 '
=BFC'1 . .1 < 'G<;16&'A @' C<'GA; 1=A ='A @'=BDK<F =' 9' < < 1A'A @' B= ;1A&'
EC 'CA@'D<< '= '@<<G6 '?;1<I<@'A ' C<'=1?C ' 9' B;' A 1 A6'96A?'1 ' . DA;@ &'
;<G<A <@' C<' 6@'A @'9 ; . 1@AD6<'G; I<;D , # A6 '1=' C<' . D' 9' C<' ;< FC
B; . =<;'=< ' E< ' C B=A @' . < &'B @<;' LBA=@A I1 FC&' ' G<;A <'1 '
C<' ;<A;' 9' C<' A><' 9' OA;@A&' IC16=' C<'C1 . =<69' A@IA F<@

D++AI'CGC@A
A>7 ; K'$+<B'<SB
?B#D ; +A'B3'><0'
<>?Q ' <M@$7' :<'
AL@B<$G@'7BD<@A

S$<M' 3B7<K'<MBDA>+C' ; @+' J@<S@@+' <M@' #>Q@' >+C' <M@' C$ @'
(AGA; <&' EC =<' C<A@ JBA; <;=' E<;<' A ' A= <6 B I &'
A ' C<' = B C<; ' < @' 9' C<' 6A><&' = '6<A; <@' CA ' C<
LBA$<$B+A' B3' >#B ' B7B+>' >+C' $GB#$' GM?M' C@3@+C' $<A' <SB' AMB7@A'
M>C' J@@+' <>Q@+ ' >+C' <M><' M@' S>A' B+' <M@' LB$+<' B3' J@$+ ' AD77BD+C@C'
' <M@' @+@7>#A ' S$<M' <M@' @N?@L<$B+' B3' D @7@>D ' S@7@' $+' 3>GBD7' B3' >'
L7B ; L<' 7@<7@><' JD<' B+>L>7<@' 7@A$A<@C' <M$A' >CG$?@ ' >+C ' $+AL$7@C' JK' M$A'
@+$DA ' A>S' <M><' $<' SBD#C' J@' LBAA$J#@' <B' A<7$Q@' >' C@?$A$G@ J#BS' J@3B7@' <M@'
<SB' MBA<$#@' ?B#D ; +A' M>C' M>C' <$; @' <B' @33@?<' >' RD+?<$B+ ' B' CB' <M$A ' MB 0
@G@7 ' $<' G>A L@?@AA>7K' <M><' M@' AMBD#C' >?<' S$<MBD<' C@#>K ' >+C' G$<M' >## M$A'
A<7@+ <M ' @' >G@' DL ' <M@7@3B7@ ' <M@' A$@ @' B3') >+<D>' SM$?M' G>A B+'
<M@' LB$+<' B3' AD77@+C@7$+ ' D+C@7' <M@' ?B ; LD#A$B+' B3' 3> ; $+@ ' >+C' 7@?>##@C'
$+' >## M>A<@' <M@' C$GAB+' @77D7$@7 ' SM$?M' S>A' @ ; L#BK@C' $+' $<AP J#B?Q>C@ '
<' G>' 3$7A<' B3' >## $; LB7<>+<' <B' ?M@?Q' <M@' L7B 7@AA' B3' * D>AC>+BG$<?M ' SMB'
S>A' B+' <M@' LB$+<' B3' @+<@7$+ ' <M@' L#>$+' <B' <M@' G@A<' B3' <M@' #>Q@ ' 3B7' <M@'
LD7LBA@' B3' ?#BA$+ ' > >$+A<' DA' <M@' 7B>C' <B') $#>+' B+>L>7<@ ' <M@7@3B7@ '
L7B?@@C@C' $+' <M$A' C$7@?<$B+ ' ?7BAA@C' <M@') $+?$B ' >+C' ; >7?M@C' S$<M' <M@'
JD#Q' B3' M$A' 3B7?@A' <B' B+><B ' SM@7@' S@7@' ><M@7@C' <M@' G$?<B7K'B3' B+>0
D <7$>+' ?B#D ; +A ' ' A>+ D$+>7K' ?B+3#$?<' @+AD@C]' <M@'
@+@ ; K' G>A 7@LD#A@C ' >+C' <M@' 7@+?M' 7@AD ; @C' LBAA@AA$B+' IIDI1&
B3'<M@' $; LB7<>+<' LBA$<$B+' B3' >#B' B+' <M@' G@A<' B3'<M@' #>Q@ ' * D>AC>+BG$<?M'
M>#<@C ' >+C' >' CGA$B+' AD3$$?@C' <B' MB#C' M$; ' $+' ?M@?Q ' B+>L>7<@' $; ; @1
C$><@#K' ?M>+ @C' <M@' 37B+<' B3' M$A'>7 ; K ' >+C ' 3>##$+ ' J>?Q' DLB+' <M@' CGA$B+A'
SM$?M' M>C' <D7+@C' <M@' #>Q@' JK' <M@' B<M@7' AMB7@ ' 3@## DLB+' <M@ ; ' #$Q@'
#$ M<+$+ ' >+C' C$AL@7A@C' <M@ ; ' D<' >#<MBD M' G$?<B7$BDA ' M$A' <>AQ' G>A
+B<' K@<' >??B ; L#$AM@C ' D7 ; A@7 ' SMB' S$<M' <S@+<K' <MBDA>+C' ; @+' M>C'
7>$A@C' <M@' J#B?Q>C@' B3') >+<D>' 7>##$@C' M$A' AB#C$@7A' >+C' L7@L>7@C' <B' ?7DAM'
DA ' >?M' B3'<M@' <SB' >7 ; $@A' 7@A<@C ' B+@' G$+ ' B+' C$@' >Q@' B3' ! >7C>' ' >+C'
>+B<M@7' B+' <M@' M@$ M<A' B3' >A<$ #$B+@] >+C' $<' S>A' B+' <M@' ?@#@J7><@C

2!7 2!2 ^ ' ' ' " !

<6AG=<@' D< E<< ' D1=' DA 6<=' C< @1=F B;=<@' B C' . < ' F<6<D;A <@' 1 ' 61 <;A0 B;<' A @' CW' A; =&' @<I <@' C1=' A < 1 ' ' C<' @< A16=' 9' G 61 1F=' A @' ? I<; . < &' @<I<6 G<@' G; 9 B @' I1F I=' ' A66' =BDK<F =&' A @' A6;<A@ ' ?AI<' G; . 1=<' 9' C1=' 9B B;<' G I<;' 99AD6<' I1 C' C1=' =BD ;@1 A <' V991F<;=' A @' C1=' = 6@1<;=&' C<' ;<A <@' C<' %1;<F ; ' I1 C' CAB?C ' ;<=<;I<&' A @' ;1B . GC<@' I<;' C<1;' K<A6 B= 'ĥD ' ;< @<;1 ?' C1 . =<69' 1 @1=G< =AD6<' ' C< . &' A ' C<' C<A@' 9' C1=' I1F ;1 B=' A; . ' <6 1 ?' BG ' C<' G GB6A;' CA ;<@' 9 ;' @<=G 1F' ? I<; . < =&' C<' 1 . G =<@' A' <GBD61FA ' 9 ; . ' 9' ? I<; . < ' ' A66' C1=' F JB<= =' <' @<F6A;<@' C<' %B><' 9' @< A&' EC ' CA@' A661<@' C1 . =<69' I1 C' B= ;1A&' @<G;1I<@' 9' C1=' = I<;<1? 'N A @' B 1 1 ?' C1=' A <=' @C' C<' <;;1 ;1<=' 9' <??1 ' A @' C<' 6<?A 1 =' 9' (6 ? A' A @' <;;A;A&' 9 ; . <@' E1 C' C< . ' ' C<' = B C' 9' C<' + ' A' 1=GA@A <' <GBD61F&' EC16=' ' C<' ; C' 9' CA ' ;1I<;' C<' . A@<' 9' . DA;@ ' A' ;A =' B @A1 ' 9 GA@A <' <GBD61F ' C<=<' ‹ ' <GBD61F=' 9 ; . <@' 1 ' C<' 9 6 ' P;31=GT@6 ['Q' 6 I1 ?' <A;' DB ' <' <GBD61F&' 1 @<;' C<' A . <' 9' C<' dd+[8W[Y 1=A6G1 <' <GBD61F ' 66' A6 ' ;< . D6<@' D<9 ;<' C<' IA JB1=C<;' 9' B= ;1A ' =' G;1 F<=&' @<=G1 <' C<1;'KB= ' ?; B @=' 9'F . G6A1 &' =F;BGB6 B=6 ' D=<;I<@' C<' ;<A 1<=' EC1FC' C< ' CA@' . A@<' E1 C' C<' ;< FC' <GBD61F&' A @' A ' C<' F F6B=1 ' 9' C<' 6A= ' FA . GA1? ' C<' B;' 9' AG6<=' ;< . D61 ?6 ' =1? <@' A' ;<A ' EC1FC' EA=' ' = ' ' D<' D; >< ' a F D<;&' 2!*b

0<; . A ' IA=' A ' 611=' 1 . <' C<' =F< <' 9' <I< =' IC1FC' E<;<' A6 . = ' A=' 1 . G ; A ' A=' C =<' AD I<' A;;A <@N' DB ' IC1FC' E<;<' A@I<;=<' ' B;' A; . =&' A @' C<;<' =<< . <@' ;<A= ' ' 9<A;' CA ' C<' ;<I<;=<=' =B99<;<@' D ' C<' A; . 1<=' 9' C<' A . D;<' A @' <B=<' EF . 6@' . A><' ;A F<' 6 =<' A66' C<' B <PG<F <@' A@IA A?<=' EC1FC' =C<' CA@' @<;1I<@' 9; .' C<' FA . GA1? ' 1 ' A6

;<AB' ;<AFC<@' C<' DA >=' 9' C<' %A BD<' A ' C<' D<?1 1 ?' 9' B?B= &' A11@' S B;@A ' 9 I<@' C<' F 1;;=<' 9' C<' AAD&' <' 9' 1 =' ;1DB A;1<=' C<' ;FC@B><' CA;6<=&' A9 <;' CAI1 ?' D<< ' IA JB1=C<@' D ' ;<AB' A ' <;<=C<1 . &' F F< ;A <@' A66' C1=' 9 ;F<=' ' C<' %A BD<&' A @' 9 ; . <@' A' G6A ' EC1FC' < @<@' C<' FA . GA1? '1 ' C1=' 9A 3 B;' <' ;<= 6I<@" ' G;<I< ' C<' KB F 1 ' 9' S B;@A ' A @' ;<AB&' >+C' ' C@3@><' C< . ' <' >3<@7' C<' C<;' G$<M' ADL@7$B7' 9 ;F<=' C<' A; . ' 9' A . D;<' A @' <B=<&' B @<;' S B;@A &' D<1 ?' C<' 9<<D6<=&' C<' ;FC@B><' A@IA F<@' A?A1 = CA ' <' 911 =' ;<GB6=<@' 1 =' A@IA F<@' ?BA;@&' F . . A @<@' D ' (<; A@< <&

b ' 9'<M@ 7?MCDQ@ M>7#@A' M@?Q' B3'<M@'>7; $@A'B3' M$+@'>+C >; J7@'>+C) @DA@'$±' ! @7 ' >+K ,5

C1=' # . ' D<1 ?' E' 6 ' 9 B; << ' C B=A @' A?A1 =' 9 ; ' C B=A @' C<' EA=' A?A1 ' F . G<66<@' ' ;< ;<A ' ' <; A' 1=' D;AI< = 6@1<;=' E' DH?A ' ' . B; . B;' A @' ' A=>' ECA ' A@IA A?<' C < ' CA@' @<;1I<@' 9; . ' A66' C<1;' I1F ;1<= , #ECA ' G; =G<F =' C< ' CA@' DB ' ' D<' @;1I< ' A=' 9B?1 1I<=' BG ' C<' 6G=' (AGA; <' =CA;<@' 1 ' C<1;' @1=AGG 1 . < ' A @' E; <' ' C<' %1;<F ; '), ['S' 1B ' =BG<;1 ;' 991F<;=' A66' B;' D<= ' ?< <;A6=' A;<' @1=AD6<@' C<' A; . ' 9' A6 ' ;<@BF<@' ' A' CA @9B' 9' . < ' 1=' <PCAB= <@' C<' C<; <=' 9' 166<=1 . ' 9' @1' 9' A= 1?61 <' A @' (A==A ' CAI<' @1<@' 9 ;' C<1;' F B ; ' 9' A;<' 1 ' C =G1 A6 ' S' CA ' = 166' D<6 ?=' ' 1 ' 1=' 1 =' ;<GB A 1 ' A @' 1 =' G;1@<' S BD<; ' A <=' 1F V;' B;A ' A @' A . G ' A;<' E B @<@' <' A;<' ADA @ <@' 1 ' C<' C<A; ' 9' A6 'N A @' 9 ;' 61<' D;AI<';<. BA ' 9' B;' A; . '1 '1 =' G;<0 =< ' E<A>< <@' = A <' C<;<' 1=' 'G; =G<F ' DB ' @<A C' +<;CAG=' C<' C B;' 9' C<' F B;A?< B=' B?<;<AB' 9' C<' 1 ;<G1@' A==< A' 1=' ' C<' G 1 ' 9' = ;1>1 ?N A @' C< ' ECA ' E166' D<F . <' 9' C<=<' D;AI<' G< G6<' C1=' 1@<A' ;< @<;=' . <' ;<=<;I<@'N '@ ' ' I< B;<' ' =G<A>' 9' @<A C' 6<= '1 ' =C B6@' @1=F B;A?<' C =<' EC ' A;<' C<' DK<F =' 9' . ' = 61F1 B@<' ' ' (AGA; <' A?A1 ' @< . A @<@' ;<1 9 ;F< . < =' A @' 91 1=C<@' E1 C' C<=<' E ;@=' ['S @A ' 6< ' B;' ; G=' ;<G =<'N . ;; E' E<' =CA66' AF ' `

C16= ' C<' EA=' 6 >1 ?' BG ' C1=' G =1 1 ' A=' @<=G<;A <' A' =B@@< ' 1 =G10 ;A 1 ' 9' ?< 1B=' =B??<= <@' ' C1 . ' <' 9' C<' ?;<A '1@<A=' EC1FC' ? I<; ' C<' ;<=B6 =' 9' FA . GA1? =' A @' C<' 9A <' 9' >1 ?@ . =' A;=C<=' =B;; 1 . @' C<' @1= ;1F ' 9' <; A' D< @' C<' @1?<' A @' C< ' A;<' ;AI<;=<@' D ' E ' FAB=<EA =' EC1FC' 6<A@' 9; . ' F ' = . <' 6<A?B<=' = B C' 9' <; A' ' C<' G =1 1 =' C< ' FFBG1<@' D ' C<' < < . ' ' C<' FA=<' 9' A' F 961F ' A>1 ?' G6AF<' ' C<=<' FAB=<EA =' B 1D<;=' F B6@' D<' 9' ' AIA16' EC16= ' F B;A?<' A @' AB@AF1 ' E B6@' D<' <I<; C1 ?'N =BFC' A' 91<6@' 9' DA 6<' 1=' C]' 6 ' <' E'C1FC' A' CA @9B6' 9' D;AI<' . < ' FA ' IA JB1=C' A ' A;1 ' A @' 1 ' EA=' _FC =< ' D ' (AGA; <' <' 1==B<@' 9 ; C' 9; . ' <; A' ' C<' C' 9' I< . D<;' D ' C<' = B C<; ' ?A <' F; ==<@' C<' @1?<' A ' F ' ;< B; <@' ' C<' ; C' D ' 61<' FAB=<EA =' A @' EA=' ' C<' G 1 ' 9' . A>1 ?' D1=' ; G=' @<916<' D ' C<' < < . 3=' ;<A;' EC< ' C< ' E<;<' FC<F><@' A ' C<' D;1@?<' 9' ;F 6<' ' C<' 6G <' A @' (AGA; <' G<;F<1I<@' E1 C' ' 61A ' A' G ; 1 ' 9' C<' ;<=B6 =' 9' C1=' =>169B6' . A BI;<' CA@' <=FAG<@' C1 . ' C<' < < . ' A; B=<@' D ' C<' = B @' 9' =CA;G' 91;1 ?' CA@' CA= < <@' BG' 9; . ' A6@1<; ' A @' A' 9 ; . 1@AD6<' A;;A ' 9' A; 166<; ' @<9< @<@' C<' GG =1 <' DA >' R B?<;<AB' =<1M<@' A' 96A?' A @' ; =C<@' E1 C' 1 ' ' ' C<' D;1@?<' A ' C<'C<A@' 9' C1=' D;AI<

M@?QB3<M@ 7@+?M' >< >#C$@7BI

' @<9< @' C1 . =<69' A ' F< A?A1 =' C< A; . ' 9' C< + G<' C< 166 E166' 9' < < 1A' EC1FC' EA=' 6 ' <B ;A6' G<;9 ;F<' A @' =1P 91I< C B=A @' . < ' B @<;' 6I1 M1' A @' +; I<;I ' ' C< . <A 1 . <' C E<I<;' C< CA@' C1 . =<69' ;<F<1I<@' C< ;<1 9 ;F< . < =' EC1FC' C< CA@' = ' 6 ?' <PG<F <@' A @' CA@' AD B ' 9 ; 91I< C B=A @' . < ' A ' C1=' F . . A @' <' 1 A;FC<@' 1 ' C< 91;=' G6AF<' 1 ' G<;= ' ' (6 ? A' A @' >' . <A=1B'<=' 9 ;' C 6@1 ?' C< ; G=' 9' C< . A ' A <=' 1 ' FC<F>' <' C< ' CA= < <@' EA;@=' C< @1?<' A @' ;< < <;<@' 61A ' C<A ;<' 9' A' @<=G<;A < = ;B??6<' EC1FC' C<' EA=' = ' AD B ' ' <; . 1 A <' D ' <' . =' @<F1=1I<' . <A=B;<=' E< ' C B0 =A @' . < ' A@IA F<@'B @<;' + ; t I<;A' D ' C< E<;' @1?<' E1 C' C<' GB;G =<' 9'9 ; . 1 ?' F . . B 1FA 1 =' E1 C' C<' A; . ' 9' C<' + G<' A @' E1 C' A BA' N EC16=' 6I1 M1' E1 C' 9 ; 91I<' C B=A @' ; G=' @<=F< @<@' 9; .' C< ; 6' D ' C< ; B <' EC1FC' ;B =' A6 ?' C<' 9 ' 9' <DA6@ ' EC1FC' =<GA;A <=' C< A><' 9' OA;@A' 9; .' C< @1?<' A @' A' = . A66' D @ ' 9' ; G=' . A;FC<@' A6 ?' C< GG =1 <' =C ;<' @1? Y3 11<' C< 9A . B=' . 161 A; ' G =1 1 ' 9' 1I 61' EA=' C< 6 ' < A ' EC1FC' C< < < . ' F B6@' D<' C<6@' 1 ' FC<F>' D< E<< ' C< 6A><' A @' C<' ;1I<;' C1=' G =1 1 ' F =1= 1 ?' 9' A' =< . 1 F1;FB6A;' G6A <AB' EC1FC' F . . A @<@' C<' ; A@' EA=' 1 =<69' F . . A @<@' D ' C<' C<1?C =' 9' <DA6@ ' EC1FC' =G;<A@' A; B @' 1 '1 ' C<' 9 ; .' 9' A ' A . GC1 C<A ;<' DB ' E<;<' 1 AFF<==1D6<' ' A; 166<; ' C<' @1?<' ;< < <;<@' C<' 9 ' 9' C< G6A <AB' A @' C<' ; A@' ;AI<;=<@' 1 ' ;1=1 ?' A;1@ B; 1 ?' 9;<JB< 6 ' ' 1 =<69

(AGA; <' G<;F<1I1 ?' C<' 1 . G ; A F<' 9' C1=' G =1 1 ' G = <@' S BD<; ' C<;<' EC ' D ;<' C<' 91;= ' =C F>' 9' C<' B= ;1A ' A; . ' A @' . A@<' A ' C<; 1F' ;<=1= A F<' E1 C' < ' C B=A @' . < ' A?A1 =' 9 ; 91I<' C B=A @' EA; . =' 9' < < . 1<=' F61 . D<@' C<' C<1?C =' 9' <DA6@ ' EC1FC' F . 0 . A @=' C< G6A <AB' 1 ' A' =< . 1F1;F6<' A @' @<=F< @<@' 9; . C1=' A . GC1 C<A ;<' 1 ' F6 =<' F 6B . =' ' 9 ; . 1@AD6<' . A==' 9' !@B7 @''>+D>7K' FAIA6; ' A @' A; 166<; ' A@IA F<@' D ' C<' ; A@' ' C< G6A <AB' N A C<;' F ;G=' B @<;' C<' ;@<;=' 9' B=1? A ' B; <@' 1 ' 9 ;' C<' GB;G =<' 9' 9A661 ?' BG ' C<' ;<A;' 9' C<' ;< FC' A; . 'N A @' B>A== I1 FC' G B;<@' G ' 1 ' A' = ;<A . ' 9' 91;<' (B ' C1=' G6A <AB' EA=' C< 6 ' G 1 ' A ' EC1FC (AGA; <' F B6@' G;<I< ' C<' KB F 1 ' 9' C< IA;1 PP=' F ;G=' 9' C<' < < . 3= B; . ' <' ;< A 1 . A <@' C<;<9 ;<' D ' C1=' E ' G;<=< F<' S BD<; 3=' = 6@1<;=' EC ' E<;<' <PCAB= <@' D ' 9 ; <1?C ' C B;=3 91?C 1 ?' A @' @1;<F <@' C1= FA ' A?A1 =' C<' F 6B . =' EC1FC' 9; .' C< <DA6@ ' C<1?C =' I<;

ℓ C< .1 A ' < A1==1 ℓ A @ C< <; ;1 ; ' > E ' D ' C< A . < 9 C< 6<?A 1 =' 9 + 6 ? Aℓ <; ;A;Aℓ A @ . A? A ' < A6= ' < ?A?<@ ' GA ' A ℓ 9;<=C EA; F ;1DB 1 ' 9 919 << ' . 1661 =ℓ A @ ' AD= A1 ' 9; .' < <;1 ?' 1 ' A ' A661A F< E1 C C< < . 1<=' 9 C< <GBD61F

(AGA; < E' G; F<<@<@ ' 9 ; .' C< F JB<= =' EC1FC C< CA@ . A@<" 1 ' C< B C A @ 61< ; Cℓ A @ 9 EC1FC C< CA@ A6;<A@ ' . A@< C< 1=GA ' @A < A @ ;A =GA@A < <GBD61F=' 1 ' < A <ℓ F =1= 1 ?' 9 . DA;@ ' A @ C< <; ;1 ;1<=' 9 @< Aℓ <??1 ℓ A @ C< <?A 1 =' < FA66<@ C1=' <E' A < C< 1=A6G1 < <GBD61Fℓ A @ . A@<

B7 ; U<\B+' B3'<M@

16A ' 1 =' FAG1 A6 ' <61<I<@ 9; .' C<;' FA;<=ℓ C< E' G; 0 K<F <@ C< =BDK<F 1 ' 9 ;FC@B>< CA;6<=ℓ C< ?< <;A61==1 . ' 9 C< 1 . G<0 ;1A6 A; . 1<=' < CA@';<F<1I<@ B . <; B=' ;<1 9 ;F< . < =' 9; .' ;A F<ℓ A @ . A;FC<@ A?A1 = ' C< B= ;1A ' FAG1 A6ℓ CAI1 ?' C< ;FC@B>< 1 ' 9; ' 9 C1 . ' A== < A EA=' 1 ' F . . A @ 9 C1=' IA ?BA;@ℓ A @ 1 . . ; A61M<@ C1 . =<69 D ' C1=' I1F ;1<=' ' C< +1AI<A @ A?61A . < ' A;1 C1Aℓ ;1Aℓ A @ ;1B61 E<1Y< ;AG1@6 ' =BD@B<@ℓ <;; ;' ;<1? <@ A ' 1< Aℓ A @ (A0 GA; < 6 ' AEA1 <@ C< . I< . < =' 9 C< C<;' A; . 1<=' ' . A;FC @1;<F 6 ' A?A1 = ' 1 ' FC< EA=' 1 ' F . . A @ 9 C< A; . ' 9 C< A . D;<A @ <B=<ℓ ;<AB 1 ' CA ' 9 C< A; . ' 9 C< C1 <ℓ A @ C<1;' A@IA F< A= A;@ ' N EC16= ' S BD<; ℓ 6<9 ' 1 ' C< ;<A;' D ' (AGA; < 9 ;' C< GB;G =< 9 @<9< @1 ?' C< ; 6ℓ EA=' IA JB1=C<@ D ' +;1 F< CA;6<=' A @ F . G<66<@ ' ;< ;<A ' (AGA; <ℓ 5BG ' D<1 ?' 1 9 ; . <@ 9 C1=' ;<I<;=<ℓ =< ' ' 1< A ' . A><' 99<;=' 9 G<AF<ℓ A @ A ' A; . 1= 1F< EA=' F F6B@<@ A ' < D< ' C< ;< FC 0< <;A6 ;<= ;<@ ' B= ;1A

@BJ@+' L7$#

A BA A @ A G ; 1 ' 9 < < 1A ' . DA;@ ' EC1FC C< CA@ F JB<;<@ℓ 1 ' <PFCA ?< 9 ;' C< 1=A6G1 < <GBD61F EC1FC C< CA 9 B @<@

C< %1;<F ; ' ;<9B=<@ ' =A F 1 ' C<=< A; ;A ?< . < =ℓ A @ (AGA; < G 1 <@ B ' < 1F< ' B= ;1A A= A ;<F . G< =< 9 ;' A BA ' C< 9A < 9 CA ℓ <GBD61F EA=' @<F1@<@ ' ;< FC < . 1==A;1<=' A; B=<@ C< G< G6< A?A1 = ' C< < < 1A ' =< A <' (B ' A ' <; Aℓ A' E ' 1 @<G< @< ' 9 < 1F<ℓ C< ;< FC ?A; ;1= ' EA=' =6A1 ' 1 ' A G GB6A;' ;<I 6 ' (AGA; <ℓ EC ' 6 ' = B?C ' A G;< <P ' 9 ;' A ' AF ' 9=G 61A 1 ℓ DB;= ' BG ' C< < < 1A ' <GBD61F E1 C 9B; ℓ A @ @< . A @<@ I< ?<A F< 9 ;' C< . A==AF;< 9 <; A ' 0< <;A6 (A;A?BA ' @3 1661<;=' EA=' @<GB <@ ' . A;FC BG ' < 1F<N C< < A <ℓ <; ;191<@ A ' C1=' AGG; AFC ' <@A F = 1 B 1 ' 9 ;' C< GB;G =< 9

+) + ' ') ;2 ' (' : 4' ' 8* ' $

GAF19 1 ?' ;A F<' A @' C< ' @1== 6I<@' EC<;<BG ' C<' ;< FC' >' G =0 =<==1 ' 9' C1=' 9A . B=' F1 ' ' @<61I<;' 1 ' ' B= ;1A' 1 ' <PFCA ?<' 9 ;' C<' ' B' 9I ' 5 (<6?1A ' A @' . DA;@' A <=' (AGA; W' =1? <@' A '6< ? C' F&F .'<B' DA<7$>' E1 C' CA ' G E<;' a 2 C' F D<;' 2!2b' A ' A . G ' ; . 1 ' ' 5 A ' A@IA A?< B=' A @' 9A . B=' G<AF<' 9' EC1FC' C<' @1F A <@ C<' G;1 F1GA6' F @1 1 =' ' AFF ;@A F<' E1 C' C1=' ;<A ' C<' . G<; ;' @>?@' 9' > ; LB0' =B; ;< @<;<@' ' ;A F<' (<6?1B . ' A @' A < F<' A @' F ' B+ ; B ' ' =< <@' CA ' =C<' =C B6@' A><' G ==<==1 ' 9' C<' 1A ' =6A @=' A F1< ' @<G< @< F1<=' 9' < 1F<' ' A6= ' ;<F ? 1=<@' C<' 1=A6G1 <' <GBD61F' ' EC1FC' E<;<' A@@<@' C<' A6 <61 <' 1 ' C<' ; C' A @' A' GA; ' 9' C<' . DA;@ < < 1A ' <;;1 ; '1 ' C<' A= '# ;A F<' 1 ';< B; ' ?AI<' BG' ' B= ;1A' C' C<' <A= ' 9' C<' @1?<' < 1F<' E1 C' =<I<;A6' 9' C<' < < 1A ' G ==<==1 =' = ;1A' %A6 . A 1A' A @' C<' . B C=' 9' C<' A A; '' C<' ;<6<A=<' 9' O< <;A6' A9A < <' A @' C1=' C;<<' F . GA 1 =' 1 ' . 1=9 ; B <' EA=' A6= ' @< . A @<@' D ' (AGA; <' A=' <' 9' C<' F @1 1 =' 9' C<' G<AF<' 9' A . G ' ; . 1 ' 66' C<' A661<@' G E<;=' E1 C' C<' <PF<G 1 ' 9' ?6A @' CA@' E' 6A1@' @ E ' C<1;' A; . =' ;A F<' CA@' <P < @<@' 1 =' E ' = = < . ' 9'? I<; . < ' I<;' A' 6A;?<' G ; 1 ' 9' B; G<' A @' A' 6A;?<' <P < ' 9' 1 =' 9; 1<;=' 9; .' C<' ; C' <A' ' C<' OB69' 9' O< A' EA=' D ;@<;<@' D ' <GBD61FA ' A <=' . . <@1A <6 ' A9 <;' C<' =1? A B;<' 9' C<' G<AF<' E1 C' B= ;1A' A' 0 ?;<=' EA=' G< <@' A ' A= A@ ' <? 1A <' A C<;' E1 C' C<' O<; . A ' . G1;<

;A F<' ;<F<1I<@' E1 C' < CB=1A= . ' C<' <E=' 9' C<' ?6 ;1 B=' ;<A ' 9' A . G ; . 1 'N DB ' C<' 1 <I1 AD6<' @1==< =1 ' D< E<< ' C<' <P<FB 1I<' G E<;' A @' C<' <6<F ;A6' G E<;' CA@' A6;<A@ ' @1=G6A <@' 1 =<69' A '1NC<' F ' $@?<$B+AB3<M@' F6B=1 B' 9' C<' <6<F 1 =' 9' C<' <A;' ' C<' <6<F 1 =' E<;<' <A;' 'a !2' 9 P' C<' . = 'GA; ' B @<;' C<' 1 96B< F<' 9' C<' ;<AF0 1 A; ' GA; ' EC1FC' EC16= ' 1 ' ;<9;A1 <@' 9; .' F =G1;1 ?' 9 ;' C<' I<;0 C; E' 9' C<' <E' = 1 B 1 ' =AE' E1 C' <;; ;' CA ' C<' <P<FB 1I<' G E<;' EA=' 1 ' C<' CA @=' 9' . < ' EC ' CA@' A>< ' GA; ' 1 ' C<' <PF<==<=' A @' F;1 . <=' 9' C<' I< 1 ' +1FC<?;B' EC =<' 1 ;1?B<=' E1 C' C<' G;1 F<=' 9' C<' B=<' 9' (1B;D ' E<;<' ' < ' > E ' EA=' < CB=1A= 1FA66 ' . A@<' + ;<=10 @< ' 9' C<' B F16' 9' 1I<' B @;<@' A @' (A;DW A;D 1=' EA ' . A@<' G;<=1@< ' 9' C<' F1< =' <' B; <B;' CAI1 ?' D<F . <' D ' 6 ' C<' ;< 1;1 ?' . <K D<;' 9' C<' %1;<F ; ' (A; CW6< . ' A ' BG;1?C ' A @' . @<;A <' . A ' EA=' FC =< ' 1 ' C1=' G6AF<' <' A=' E<66' A=' C1=' F 66<A?B<' A; ' E<;<

HK9 HKH ‘ M ‘ ‘ ‘ ‘ !

GG =<@‘ ‘ I1 6< ‘ . <A=B;<=N DB‘ C< ‘ 6 ‘9 ; . <@‘1 ‘ C‘ %1;<F ;A ‘ B
. 1 ;1 ‘ EC1FC‘ EA=‘ G E<;6<=‘ A?A1 =‘ C‘ ;1B . I1;=
(A;;A=f‘ <ED<6f‘ A @‘ A‘ #I<166<;<f‘ EC‘ = ‘ < <;<@‘ F#1#B=A @'Y
DLB+‘ >‘ <7D #@‘ S‘$<M‘ <M@‘ <SB‘ ‘BD+?DA‘ C‘ #><<@7 ≟M_@ $7@?<B7K
I <@‘ GA;@ =‘9 ;‘ . A ‘F6A==<=‘ 9‘G; =F;1D<@‘ G<;= =N A @‘A‘@<GB ‘ 9‘
=f‘ A . <@‘ A . 166‘ S ;@A f‘ G6<A@<@‘ E1 C‘ ?;<A ‘ <6 JB< F‘ 1 ‘ ' C‘
B F16‘ 9‘ 1I‘ B @;<@‘ 9 ;‘9;<<@ . ‘ 9‘ E ;=C1Gf‘ A @‘ 1 =‘ ;< <= AD61=C0
. < ‘ 1 ‘ C‘ <GBD61F‘ 1=‘ G; G =A6‘ EA=‘ < <; A1 <@f‘ A @‘ A‘ I ‘ EA=‘
GA==<@‘1 ‘ 1 =‘9AI B;‘ 1 ‘=G1 ‘ 9‘ C‘ < <;?< 1F‘ GG =1 1 ‘ 9‘ C‘ <I 6B0
1 A; ‘GA; ‘ C‘ =A . ‘ @<GB ‘ @< . A @<@‘ C‘ AD 61 1 ‘ 9‘ C‘ 1I1F‘
A Cf‘ EC1FC‘ A‘9A A6‘ 6AE‘ CA@‘ @< . A @<@‘9; .‘ C‘ G;1<= =N A @‘ A6 C B?C‘
C1=‘ . 1 ‘ EA=‘ 6 = &f‘1 ‘ EA=‘ D ‘A‘ I<; ‘= . A66‘ . AK ;1 ‘ C1=‘ 6A <;‘ JB<=0
1 ‘ EA=f‘1 ‘ C‘ < <=‘ 9‘ C‘ %1;<F ;A <f‘ 9‘ I<; ‘?;<A ‘1 . G ; A F<f‘ A @‘1 ‘
=AE‘ CA ‘ C‘ <E‘ <6<F 1 =‘ E B6@‘ 1 <I1 AD6 ‘?1I‘ C‘ . AK ;1 ‘ ‘ C<1;‘
GG < =‘ C<;‘ E<;<f‘ @ BD 6<==f‘ A . ?=‘ 61‘ 6A <;f‘ 1 ‘ C‘ E ‘
B F16=f‘ = . ‘ A61= =f‘ A @‘ A;@< ‘ ;<AF 1 1= =f‘ EC ‘ @<=1;<@‘ E1 C‘
A66‘ C<1;‘ C<A; =‘ C‘ ;<= ;A 1 ‘ 9‘ C‘ (B;D =N DB ‘ AFF ;@1 ?‘ ‘ C‘
I<; ‘D<= ‘ <= 1 . f‘ C‘ . AK ;1 ‘ 9‘ C‘ A . <=‘ EC1FC‘ E<;‘ @;A#I ‘9; .‘
C‘ <6<F ;A6‘ B . ‘=1 F‘ C‘ G; . B6?A 1 ‘ 9‘ C‘ = 1 B 1 ‘ 9‘ C‘ <A;‘
f‘ E<;‘ = ;A ?<;=‘ ‘ C‘ A61= ‘GA; ‘ * C< ‘@1@‘ ‘@<=1;<&‘ ‘B=‘
C‘ E ;@=‘ 9‘ A ‘ < . 1 < ‘ A @‘ 1 . GA; 1A6‘ C1= ;1A ‘ 9‘ B;‘ E ‘ @A f‘ [‘A‘
F B <; ;<I 6B 1 f‘ DB ‘ C‘ AD 61 1 ‘ 9‘ C‘ ;<I 6B 1 A; ‘ 6AE=‘ EC1FC‘
E<;‘ = 1 ‘ 1 ‘ 9 ;F<‘ C< ‘ I1=C<@‘ 9 ;‘ G<AF‘ A @‘ ;B‘ 61D<; f‘ A @‘ C‘
=BFF<==1I‘ GB;191FA 1 ‘ 9‘ A‘ %1;<F ;A ‘ ICIFC‘ IA=‘ C‘ @1;<F ‘C<1;‘ 9‘ C<
I< 1 ‘ (B ‘ C‘ %1;<F ;A ‘ G>A‘ A=‘ . BFC‘ GG =<@‘ ‘ C<
) BC@7><@A‘>A‘ <B‘<M@‘ BK>#$A<A 0I‘ ‘ L7@<@+C@C‘<B‘ 7@ >7C‘<M@A@‘<SB‘ L>71
<$@A‘>A‘ B+@‘ ‘>+C‘ 3>#A@#K‘ 7@L7@A@+<@C‘<M@ ;‘ >A‘ ?B+AL7+ ‘ $+‘ ?B ; ;B+‘ 3B7‘<M@‘
G@7<M7BS‘B3‘<M@‘ @LDJ#$7‘ >+C‘ <M@‘ 7@0@A<>J#$AM ; @+‘ B3‘ ; B+>7?MK‘ ‘
7@L7@A@+<@C‘ $<A@#3‘ >A‘<M@‘ C@3@+C@7‘ >+C ‘>G@+ @7‘ B3‘<M@‘ L7$+?$L#@A‘B3‘ ,5 ‘
>+C‘ <M@‘ $+<@7@A<A‘ JB7+‘ B3‘ <M@‘ @GB#D<$B+‘ GM$#A‘$‘ G>A‘ $+‘ 7@>#$<K‘ B+#K‘
>+N$BDA‘<B‘ C@3@+C‘ $<A@#3‘ $+‘ C@3$>+?@‘ B3‘ >## #> ‘ >+C‘ RDA<$?@‘ ‘6>+C‘ <B‘ 7@<>$+‘
<M@‘ ?M$@3‘ LB G@7‘ $+‘ <M@‘ M>+CA‘ B3‘ <#R@‘ ; @ ; J@7A‘ B3‘ <M@‘ B+G@+<$B+‘ >+C‘ <M@‘
M@$7A‘ B3‘ <#$@$7‘ G$B#@+<‘ >+C‘ 7@GB#D<$B+>7K‘ LB#$?K
9‘ C<;‘ E<;‘ 9<E A61= =‘ 1 ‘ C‘ I‘ . F16=f‘ C<;‘ E<;‘ A6= ‘ 9<E‘
. < ‘@< <; . 1 <@‘ ‘G; I ><‘ ‘ C‘ GA; ‘ 9‘ C‘ %1;<F ;=‘ A‘ ;<F B;=‘ ‘
1 6< F‘ A?A1 =‘ C<1;‘ F 66<A?B<=‘ (B ‘ A=‘ A‘ ?;<A ‘ B . D<;‘ 9‘ C<1;
≟ R4 @‘ >$(>+<@‘ P‘ $3@‘ B3‘ BK@70 B##>7C 0
‘ ‘ n

! "& ' ' / ' : !>' ' 8* - ' $

. < . D<;=' CA@' =A ' 1 ' C<' I< 1 &' C< ' A B;A66 ' 9<A;<@' A' ' F . G6< <' ;<AF 1 &' A @&' A99<F 1 ?' A' ?;<A ' M<A6' 9 ;' C<' = 1 B 1 &' C< ' 9 1 . @<@&'

A ' Ç<' <6' A6 . &' B @<;' C<' A . <' 9' C<' = 1 B 1 A6

#DJ' B3' >#; ' AAB?$><$B+' B3' 6BD&' A ' A== F1A 1 ' EC1FC' EA=' E1@<6 ' GG =<@' 1 ' 1 =' =G1;1

A @' < @< F ' ' CA ' 9' C<' <6' 61FC &' 1 ' EC1FC' E<;<' A==< . D6<@' C<' . = ' A;@< ' . < . D<;=' 9' C<' ;<AF 1 A; 'GA; ' C<' 6A <;' E<;<' C<' G; G =<;=' 9' A' 9<E' D 6@' ;<= 6B 1 =' IC1FC' E<;<' A=' @1=G6<A=1 ?' ' C<' %1;<F ;=' A=' ' C<' ?< <;A6=' 9' C<' A; . 1<=&' A @' <=G<F1A '= ' ' C<' B ?' F JB<; ;' 9' A6

C<' B F16=' =AE' E1 C' A P1< ' C<1;' ?< <;A6=' ;<I 6B 1 1M1 ?' B; G<& <PF1 1 ?' 1 ' C<' <1?CD B;1 ?' >1 ?@ . =' C<' @< . F;A 1F' F6A==' A?A1 = ' C<' BGG<;' F6A==<=&' 9 B @1 ?' <GBD61F=&' A @' F;<A 1 ?' AD; A@' A' = A <' 9' C1 ?=' 1 F . GA 1D6<' E1 C' C<' =G1;1 ' 9' C<' 6@' . A;FC1<=&' A @' EC1FC' C;<A < <@' '6<A@' 'A' G<;G< BA6' = A <' 9' EA;' D< E<< ' C<' <GBD61F' A @' C<' C<;' B; G<A ' + E<;=' C<' B F16' 9' 1I<' 1 . @;<@&' ' C<' . 1 ' 9' A' . < . D<;' 9' C<' 61FC ' 6BD&' < <;?< 1FA66 ' @< . A @<@' CA ' C<' <?1ezA 1I<' G E<;' =C B6@' CA I<' A' =CA;<' 1 ' @< <; . 1 1 ?' JB<= 1 =' 9' G<AF<' ;' EA; ' '

?< <;A6' CA@' <P<;F1=<@&' 1 ' C1=' ;<=G<F &' A' . ;<' A;D1 ;A; '

<M@' >7 ; K' $+' B ' ; @A<$B' $&B#$<$?A ' G E<;' CA ' CA@' (AGA; <&' EC ' CA@' <? 1A <@' 9' C1=' E . <;<' AB C ;1 ' =<I<;A6' ;<A 1<=&' A @' C<' G;<61 . 1 A;1<=' 9' C<' G<AF<' 9' A . G ; . 1 ' <' EA=' 99< @<@' A ' C<=<' G;< < =1 =' ' C<' GA; ' 9' C<' B F16' 9' 1I<' B @;<@&' A @' < ;<A <@' C<' 0 I<; . < ' '6 >' ' C<' A; . ' 9 ;' =BGG ; ' A?A1 = ' C<' B F16=' A @' C<' ;<AF 1 A; ' G;<==' <' <I<' =< ' ' +A;1=&' A=' A' =BGG ; ' ' C<' G 61F ' 9' C<' %1;<F ;=&' 0< <;A6' B?<;<AB&' <' 9' C<' D;A I<=' . < ' 9' C1=' A; . &' DB 'D ' ' . <A =' =F;BGB6 B=' A=' ' C<' < . G6 . < ' 9' I1 6< ' . <A =&' A @' @1=G =<@' ';<?A;@' C<' =E ;@' A= C<' =BG;< . <' A;?B . < ' 1 ' G C 1F=&' EC< C<;' A ' C . <' ;' AD; A@' C<' %1;<F ; ' ?A I<' C1 . ' C<' F . . A @' 9' C<' . 161 A; ' @1I1=1 ' 9' +A;1=' C<' F;1i=' EA=' E' AGG; AFC1 ?' ' 9<E' 1 96rW 1A6' . < . D<;=' 9' C<' E ' B F16=&' + ; A61=&' 1 . W &' A @' A C1<B' %B . A=&' < @<AI B;<@' R ' D A1 ' = . <' FCA ?<=' 1 ' C<' 1 1= ;K##&' A=' A' ?BA;A <<' CA ' C<' %1;<F ; ' E B6@' GB;=B<' A' 61B<' 9' F @BF ' . ;<' 1 ' F 9 ; . 1 ' E1 C' C<' E1=C<=' 9' C<' . AK ;1 N' DB ' C<' %1;<F ; &' ' C<' F ;A; &' =B . . <@' ' C<' 1 1= ; ' . < ' EC ' E<;<' C = 16<' ' C<' @<;A <' GA; N' A @' C< F<9 ; C' A' - '1 / ' AGG<A;<@' 1 <I1 AD6<'

C<' %1;<F ;=' E' . A;FC<@' = . <' ;<?1 . < =' BG ' C<' FAG1 A6&' 1 ' @<91A F<' 9' A' F6AB=<' 9' C<' = 1 B 1 ' EC1FC' G; C1D1 <@' C<' G;<=< F<' 9

; G=' . C1 ' A'@1= A F<' 9' #I<6I<' 6<A?B<=' 9' +A;1=(' 6<==' 1 ' AFF ;@A F<' E1 C' A' =G<F1A6 ' 6AE' GA==<@' 1 ' ;' <A;(' +A;1=' 1 =<69 ' C<' B F16=' DB;= ' 9 ; C' 1 ' ;<G; AFC<=' A @' C;<A =' A?A1 =' C<' %1;<F ;=(' ' EC1FC' C<' 6A <;' ;<G61<@' D ' 91<; ' A@@;<==<=' ' C<' A; . 1<=(' A @' ' C<' B F16=' C< . 0 =<6I<= ' ' EA=' 1 ' IA1 ' CA ' C<' %1;<F ;=' A; ' A @' (A; CW6< . ' < @<AI B;<@' ' JB<66' C<' ;1=1 ?' = ; . ' N C<1;' C;<<' F 66<A?B<=' ;<9B=<@' ' 61= < ' ' C< . (' A @' 91P<@' C<' C' 9BF 1@ ;' 9 ;' C<' <P<FB ' F BG@8y=A' 9 1 ' 9' C<1;' F;1 . 1 A6' G; K<F =' %B;1 ?' C<' 1?C ' G;<F<@ ' 1 ?' CA ' @A ' B?<;<AB' . A;FC<@' E<6I<' C B=A @' . < ' 1 ' +A;1=(' A @' 1 ' C<' . ; 1 ?' C<=<' ; G=(' B @<;' C1=' E ' F . . A @(' =BG0 G ; <@' D ' 9 ; ' G1<F<=' 9' FA (' =B; ; 1 . @<@' C<' B16<;1<=(' 1 ' EC1FC' C<' B F16=' C<6@' C<1;' =1 1 ?=' C<' ?;< A@1<;=' 9' C<' B F16=3 ?BA;@' K 1 <@' B?<;<AB(' EC ' A;;<= <@' E1 C' C1=' E ' CA @' C<' D;AI<' (A . <6(' EC ' F . . A @<@' CA ' ?BA;@(' A @' 0< <;A6' +1FC<?;B(' C<' +;<=1@< ' 9' C<' B F16' 9' 1I<' B @;<@ ' A (' 9' C<' . < . D<;=' 9' C<' B F16=' E<;<' @;1I< ' AEA ' ;' A>< ' G;1= <;=' KB=' A=' C< ' E<;<' ' C<1;' EA ' ' C<' B16<;1<=' C<' %1;<F ;=' AGG 1 <@' C<' @] ' A @' C<' FC 6' 9' <@1F1 <' A=' C<' G6AF<=' 9' . << 1 ?' 9 ;' C<' E' . B 16A <@' B F16=' N GBD0 61=C<@' A' 6< <;' E;1 < ' D ' ;<AB(' EC1FC' ;<I<A6<@' +1FC<?;B3=' ;<A= ' N A @' A ' C<' =A . <' 1 . <' . 1 A <@' A' . . 1 <<' 9 ;' C<' GB;G =<' 9' EA FC1 ?' I<;' C<' GBD61F' =A9< ' ' AFF ;@A F<' E1 C' C1=' 6AE(' EC1FC' EA=' @<F6A;<@' ' D<' <' 9' GBD61F' <F<==1 (' 9 ; E ' . < . D<;=' 9' 1<' B F16' 9' 1I<' B @;<@(' <6<I< ' . < . D<;=' 9' CA ' 9' CW' 7BAB7sL<$B+ E F1< =(' A @' E ' 9' C<' %1;<F ;=(' A; ' A @' (A; CW6< . (' E<;<' F 0 @< . <@' ' D<' ;A =G ; <@' ' C<' 9A A6' @1= ;1F ' 9' 1 A . A;1' . ?= ' C =<' EC ' E<;<' C<' I1F 1 . =' 9' C1=' F;B<6' . <A=B;<(' E<;<' +1FC<?;B(' (1== ' @3 ?6A=(' A . 166<' S ;@A (' +A= ;< (' 1 . W (' (A;DW A;D 1=(' A9 ' A@<DA (' + ; A61=(' A @' ; Z ' @B' B@;T Y' C<' %1;<F ;=' A6= ' . A@<' C<' <@1 ;=' 9' C1; 91I<' K B; A6=' C<' I1F 1 . =' 9' C<1;' ;<=< . < ' C< ' CA@' C<' 6AE=' GA==<@' 1 ' 9AI@E' 9' C<' G;1<= =' A @' < . 1?;A =' ;<I<;=<@(' A @' A B66<@' C<' <6<F 1 =' 9'9 ; <1?C ' @<GA; . < =' <;61 ' @<' % BA1' A @' ;A Z 1=' @<' <B9FCT <AB' E<;<' FC =< ' A=' =BFF<== ;=' ' A; ' A @' (A; CW6< . (' EC ' CA@' D<< ' DA 1=C<@' A @' G; =F;1D<@' D ' C<1;' F 60 6<A?B<=

4' <' S>A' @G$C@+<' 37B ; ' <M@' $+A<7D?<$B+A' SM$?M' <M@' $7@?<B7A' >G@' <B' <M@' B3$?@7A' SMB' >77@A<@C' <M@A@' L7$AB+@7A ' B7' <B' <MBA@' SMB' 7@?@$G@C' <M@ ; ' <M><' SM@+' <M@K' <7>+ALB7<@C' <M@ ; ' <M@K' $+<@+C@C' <B' C@A<7BK' <M@ ; ' & @@' @' >7>+<@ ' P' $A<B7K' B3' <M@' $7@?<B7K 0

' = 'A=C<AGG<A;<@ C<;< EA=A'?;<A '=C B ' 9 [' ?61I< C< <GBD61F |
?61I< (AGA; <z A66< ;A @ 1 'A'D;1<9A@@;<==G;A1=<@ C< . @<= '
9 C< C<; ' EC ' A ;1DB <@ A66 C1=?6 ; ' ' C1 . =<69 DB ' ' C< <I 0
6B 1 C< IA6 B;' 9C1= ; G= A @ ' ;A F<' C< ' (AGA; <=G ><)
[1 1M< =& C< =A1@ [B CAI< ;?A 1M<@ A'?;<A ' A 1 ' EC1FC 1= 6 '
F1;FB . =F;1D<@ D ' C< 61 . 1 = EC1FC A B;< C<;=<69CA=<= AD61=C<@ ' 'CAI<
C< C B;' ' G;<=< ' ' B C< ;<A '=1? <@ A ' A . G ; . 1 A @
;A 191<@ D ' C< . G<; ;' C1= G<AF< =<FB;<= C< 61D<; C< G; =G<;1 A @ C< ?6 ; ' 9 C< <GBD61F ' C< ' C< CAGG1 <== 9 C< ;< FC G< G6< =CA66 D< DA=<@ ' C< D<= ' G ==1D6< = = < . ' 9 6AE= C< EC 6< 9 B; G< E166 D<F . < 9;<< CB=1A= 1F AGG6AB=< ?;<< <@ C1= A@@;<==A @ (A;;A= ;<G61<@ ' 1 G 1 1 ?' B ' ?6A @ ' C< B ?' C<; ' A= A' 9<; 16< 91<6@ 1 ' EC1FC C< . 1?C ' ;<AG <E 6AB;<6=' ' GA ;1 1F C . ' D ' C< G < ' C< 1<;' EA= C< ' FCA <@ E1 C C< AFF . GA 1 . < ' 9 A' . A? 191F< ' ;FC<= ;A' A @ C< ; A;' 9 FA ' 9 <;' C1= S BD<; ' A @ @;< == ' A@IA F<@ D<A;1 ?' A' 96A?C< C . A?< GA1@ D ' C< <GBD61F ' C< A; . ' 9 A6 ' = <PG6 1 = A @ 1 = F JB<= = E<;< 1 =F;1D<@ BG ' 1 '1 ' 6< <;= 9 ? 6@ EC1FC 6@ CA '1 ' CA@ A>< ' 919 ' C B=A @ G;1= <;= =1P =1P 96A?= <6<I< ' CB @;<@ G1<F< 9 A; 166<; 9 ;F<@ B . <; B= ;<A 1<= ' C< A61A ' = I<;<1? = <PAF <@ A' ;1DB < 9 C< . = ' =G6< @1@ E ;>= 9 A; 9 B?C ' =1P =<I< ' ?6 ;1 B= DA 6<= A @ D A1 <@ <1?C << ' @<F1=1I< I1F ;1<=

P9A F<#A @' A??;<==1I<' AD; A@&' F B6@' ' DB ' < @' ' A' = A <' 9' G<;0 G< BA6' EA;&' EC16=' A A;FC &' F1I16' @1= B;DA F<=&' =BFF<==1I<' A @ DA >;BG F1<=&' 9 ;F<@' 6 A =&' C<' = A? A 1 ' 9' F . . <;F<&' A @' G 66 ć 9 C# C<' ;B1 ' 9' C<' GBD61F' F;<@1 &' CA@' <PCAB= <@' A66' C<' ;<= B;F<=' @1;<F ; &' 9' ;A F<' C<' 0 I<; . < ' EA=' 1 ' A' F @1 1 ' 9' <P ;< . <' @1991FB6 &' A @' A=' 1 ' F B6@' G; I1@<' <1 C<;' 9 ;' C<' =BGG ;' 9' C<' A; . ' ;' C<' <PG< =<=' 9' C<' = A <' D '6<?1 1 . A <' . <A =&' 1 ' CA@' ;<F B;=<' ' C =<' EC1FC' E<;<' I1 6< ' A @' 166<?A6&' A @' 'B KB=' A @' ;AGAF1 B=' G; F<<@1 ?=' EA;@=' C<;' A 1 =' 'F I< <@' C<' ;<A=B;<' 9' C<' F1 ' 9' (<; <&' IA6B<@' A ' . ;<' CA ' C1; ' . 1661 =&' A @' C<' ;1FC<=' <P1= 1 ?' 1 ' . <&' A @' A66' C<' ;<= B;F<=&' EC< C<;' 1 ' . < ' ;' . A <;1A6' 9' EA;&' G ==<==<@' D ' +1<@ . ' C<=<' C;<<' = A <=' E<;<' A661<=' 9' ;A F<&' A @' C<' %1;<F ; ' 9 ; . <@' A' G;< <P ' 9 ;' 6A 1 ?' CA @=' 16G ' C<1;' G ==<==1 =' ' CA@' 6 ?' =1 F<' A; B=<@' C<' ;<I 6B 1 A; '=G1;1 ' 1 ' E1 M<;6A @' @1 ' 9# ' RR' 1D<; 'EA=' 'AD=< '9; .' E1 M<;6A @&' =A =' A 'AB C ;' A6;<A@ 'JB <@&' [' DB '1 ' . =' 9' C<' A =' C<' =BG<;1 ;' AB C ;1 'A @' C<' 991F<=' 9' ? I<; . < 'E<;<' F 91@<@' ' C<' A;1= F;AF N' DB '1 '=G1 <' 9' C1=' B <JBA6' @1I1=1 ' 9' G 61 1FA6' ;1?C =&' E1 M<;6A @' CA@' A6EA =' G;<0 =<; I<@' C<' 6 I<' 9' ;B<' 61D<; &' CA '1=' '=A &' 9' KB= 1F<&' 9' ;<=G<F '9 ;' ;<61?1 &' 9' 9A . 16 'AB C ;1 'A @' C<' ;1?C =' 9' G; G<; &' 9' CB . A 1 'A @' ? @' . ;A6=&' A @' <=G<F1A66 'A' 6 I<' 9' C<1;' E 'F B ; &' A' G; B@' ;< . < . 0 D;A F<' 9' C<1;' A F1< ' ?6 ; 'A @' C<' DA 6<=' C< 'CA@' 9 B?C '9 ;' C<1;' 1 @<G< @< F<' C<' A;1= F;AF 'CA@' 6 = '1 =' 6@' 9<B@A6' FCA;AF <;&' <I< ' 1 ' C =<' A =' EC<;<' 1 'EA=' . = 'G E<;9B6&' A @' 6 '<P<;F1=<@' AB C ;1 ' D ' . <A =' 9' C<' . A?1= <;1A6' 991F<=' 1 ' 1 =' G ==<==1 ~' C<' ;< FC' <I 6B 1 &' <I<; C<6<==&' A; B=<@' 1 ' E1 M<;6A @' A' @<=1;<' 9 ;' <JBA61 ' ' 6 '1 ' C<' A =' EC<;<' C<' A;1= F;A 1F' <6< . < ' EA=' @ . 1 A &' DB ' <=G<F1A66 ' A . ?=' C =<' G GB6A 1 =' EC1FC' #CA@' D<< ' F JB<;<@' ;' D A1 <@' 1 ' C<;' EA =' A ' IA;1 B=' G<;1 @=&' A @' EC ' ' CA ' AFF B ' E<;<' 6 ><@' BG ' A=' =BDK<F ' G GB6A 1 =&' A @' @1@' ' < K ' C<' =A . <' ;1?C =' A=' C<' A =' E1 C' EC1FC' C< ' E<;<' 1 F ;G ;A <@' ' C1=' EA ' C<' @1= ;1F ' 9' AB@' EA=' =BDK<F ' ' C<' A ' 9' (<; <&' A @' C<' AB@ 1=&' 61><' C<' G GB6A 1 '=BDK<F ' ' C<' C<;' A =&' E<;<' 1 @1? A 'A ' C<1;' G 61 1FA6' 1 9<;1 ;1

C<' %1;<F ; ' G< 6 ' 99<;<@' aSA BA; &' 2! &b' 1 =' G; <F 1 ' ' C<' @< . F;A 1F' GA; '1 ' E1 M<;6A @' A?A1 =' C<' A;1= F;AF &' ' C<' GA; 1=A =' 9' A' F< ;A6' ? I<; . < ' A?A1 =' C =<' EC ' E<;<' 1 '911I B;' 9' A' 9<@<;A6

;<A=B; ' EA=' =<1M<@f C<' FCB;FC<=' A @' F I< =' E<;<' @Z=G 16<@' 9' C<1;' E<A6 Cf C<' F1 ' 9'# .<' EA=' 6A1@' B @<;' A' 9;<=C' F ;1DB 1 f A @' C<' + G<f +1B=' 1 f' EA=' . A@<' G;1= <; ' C1=' I< <;AD6<' + 199f G### IC ' EA=' . ;<' CA ' <1?C ' <A;=' 6@f 16f A @' 9<<D6<f EA=' mf6AFYC%D<F # I1 6< 6 ' ; ' 9; .' C1=' GA6AF<' D ' C<' ;< FC' ; G=f =BD ' K<F <@' ' C<' ?;<A <=' 1 =B6 =f A @' @;A??<@' 1 ' <P16<' ' A6< F<f EC<;<' C<' @1<@'a B?B=' "& 2! !&b'1 . G6 ;1 ?' GA;@ '9 ;' C1=' < <. 1<=f A @' D6<==1 ?' +;A F<f 9; . EC1FC' C<' CA@' =B99<;<@' = ' . A '1 KB;1<= C<' 1 IA=1 ' 9' E1 M<;6A @' A @' C<' . A ' A <=' A ' A' G<;1 @' 9' F . G6< <' G<AF<f <PF1 <@' C<' 1 @1? A 1 'A @' KB=' A6A; .' 9' C<' B; G<A ' G E<;=f A @' . A@<' C<. ' G<;F<1I<' CA ' C<;<' EA=' ' @B;AD6<' G<AF<' ' D<' C G<@' 9 ;' E1 C' C<' %1;<F ;1A6' 0 I<; . < ' C<' A?A1 ' 9 ; . <@' A ' A661A F<' A?A1 =' +;A F<f A @' C<' F<6<D;A <@' ?61=C' 1 1= <;f 1661A . ' +1 f 1 @BF<@' B= ;1A' A @' B==1A' ' D<F . <' . < . D<;=' 9' G&G C<' <E' F A61 1 ' C<' B KB=' A AF>' ' ? G ' FAB=<@' C<' # G<'=? =' . A ' + ; <' ' K 1 ' C1=' 6<A?B<f A @' C<' B; ' 9' AG6<=' ##dd @1@' = ' A6= ' C<' 6A <;f ? I<; <@' D ' LB<< ' A; 61 <f C<' E19<' 9' - 1 ?' <;@1 A @f I< B;<@' ' ;1=>' 1 FB;;1 ?' C<' 9A <' E1 C EC1FC' 1 ' EA=' C;<A < <@f A @' @<F6A;<@' EA;' A?A1 =' ;A F<' a I<. D<;f 2! b C<' %1;<F ;=' 1 . . <@1A <6 ' . A;FC<@' BG ' C<' +< 1 =B6A' C<' A; . ' 9' A6 'N DB ' D<9 ;<' 1 IA@1 ?' C<' = B Cf C<' ' E<;<' A P1 B=' ' F 0 91; .' C<1;' G E<;' 1 ' C<' ; C' 9' A6 f A @' ;<= 6I<@' ' A><' +1<@0 . ' 9; .' A ' 1 99< =1I<' +;1 F<f CA;6<=' . . A B<6' f C<' = ' A @' =BFF<== ;' 9' 1F ;' . A@<B=' f EC ' CA@' 9A1 C9B66 ' D=<;I<@' C<' ;<A 1<=' F F6B@<@' D ' C1=' 9A C<;' E1 C' ;A F<' C<' %1;<F ;=' @1@' A66' CA ' F B6@' D<' =B??<= <@' D ' C<' =G1;1 ' 9' I1 6< F<' A @' F1 . 1 ?' ' ;<@BF<' C1=' G;1 F<' ' @<=GA1;' C< ' CA@' A6;<A@ ' <PF1 <@' A ' C<' ?A <=' 9' +1<@ . f 1 ' C<' F1 ' 9' 0< Af A' ;<I 6B 1 A; ' . I<. < f EC1FC' =B;;< @<;<@' 1 ' 1 ' C<' CA @=' 9' C<' %< . F;A =f A @' C<' 0< <=<' A <' CA@' D<F . <' @<;' C<' G; <F 1 ' 9' ;A F<f C<' 1?B;1A ' <GBD61F' ' =1 . 16A;' ;<I 6B 1 ' EA=' =<' ' 9 ' 1 ' +1<@ . ' D ' ;< FC' A?< =N' A @' C<' %1;<F ;=' <I<; EC<;<' 9 . < <@' ;<D<661 f =BGG ; <@' ;<I 6 =f G; C1D1 <@' C<' - 1 ?' 9; .' =BGG;<==1 ?' A @' GB 1=C1 ?' C<. f 9 ;F<@' C1 . ' # ' ?1I<' BG' C<' F1 ' 9' B;1 f C<' F1 A@<6' A @' CW' A;=< A6=f, $BC ; B+<' >+C A @' C<' B @<;' IA;1 B=' G;< <P =f =<1M<@' C1=' 9 ; ;<==<=' h' C<' ;< FCf a%<F<. D<;f 2! b' ' 6< ? C' CA;6<=' . . A B<6f A6;<A@ @<G;1I<@' 9' A66' C1=' G E<;f EA=' F . G<66<@' ' AD@1FA <' C<' C; <' 9' +1<@

C< ' CA@' ' ? I<; ' 6 ' ;A F<' DB ' 66A @&Y' E1 M<;6A @' # @' C' . A ' <GBD61F=' 1 ' EC1FC' A6 ' EA=' E' @1 I 1@<@N EC16= ' 9 ;' EA ' 9' A' G; G<;' ;?A 1MA 1 ' C< ' F B6@' D A1 ' <1 C<;' . < ' ;' . < ' ' EA=' <I<; C<6<==' <F<==A; ' ' @<9< @' C<=<' IA;1 B=' >1 ?@ . =' A @' 9 ;' CA ' GB;G =<' ' FA;; ' ' EA;' BG ' A' 61 <' EC1FC' <P < @<@' 9; .' C<' <P<6' ' C<' @;1A 1F' A @' EC1FC' A AF><@' 1 ' 9; ' D ' B= ;1A' A @' B==1A' EA=' <PG =<@' ' C<' C<;' =1@<' ' C<' ?C=C' 96<< =' ' EA=' 9; .' ;A F<' A6 <' CA ' 9 ;F<=' F B6@' D<' @;AE ' 9 ;' C<' @<9< F<' 9' = ' IA= ' A' <;;1 ; ' ; ' C B=A @' 9' C<;' D<= ' = 6@1<;=' A @' C<;' ?;<A <= ' FAG A1 ' E<;<' 1 ' ? G N C<' C<;' A; . 1<=' E<;<' @1 . 1 1=C<@' ' < CA69' D ' =1F> <==' A @' @<=<; 1 =N C<' F =F;1G 1 ' E' 91;= ' GB ' 1 ' B=<' CA@' 9A16<@' ' =BGG6 ' C<' IAFA F1<=' 1 ' C<' ;A >=N C<' @<91F1< F ' 1 ' C<' ;<A=B; ' 1 F<==A 6 ' 1 F;<A=<@N C<' @1=GB <=' EC1FC' F 1 BA66 ' >' G6AF<' D< E<< ' C<' F1I16' 'A @' . 161 A; ' AB C ;1 1<=' 9' C<' F JB<;<@' F B ;1<=' ;< @<;<@' C<' <P<FB ' ' 1 ' 9' C<' ;@<;=' 9' C<' O I<; . < ' I<; ' @1961FB6 N EC16= ' C<' 1C=BD ;@1 ' ' A 1 ' 9' C<' ; G=' EC ' =AE' CA ' C<1;' =<; I1F<=' E<;<' <F<==A; ' C<' ;AGAF1 ' 9' A' . B6 1 B@<' 9' A?< =' A @' C<' 1 F< @1A; ' G;1 F1G6<=' EC1FC' A' F; E@' 9' %< . F;A =' @1==< . 1 A <@' C; B?C' C<' <E' <GBD61F=' ?A I<' 61< ?;<A <= ' ;<A= ' ' 9<A;' CA ' 1 ' C<' FA=<' 9' A ' ;<I<;=<' 1 =B;;<F 1 =' B6@' A><' G6AF<' A . ?= ' C<1;' =<I<;A6' G GB6A 1 =' <I<; C<6<==' C<' ;< <= AD61=C . < ' 9' G<AF<' EA=' 1 . G ==1D6<' 9 ;' B= ;1A' A @' ?6A @' E<;<' . ;<' <;;191<@' A ' C<' ;<I 6B 1 A; ' @ F ;1 <=' 9' ;A F<' CA ' A ' 1 =' A; . =' A @' C<;<' F B6@' D<' ' @ BD ' CA ' C<' B==1A ' A @' B= ;1A ' A; . 1<=' E B6@' =G<<@16 ' . A;FC' A?A1 = ' 66A @' E1 M<;6A @' A @' A6

C<' %1;<F ; ' ;<= 6I<@' ' A 1F1GA <' C< . ' A @' E1 C' C1=' DK<F ' @1= ;10 DB <@' C<' ;< FC' A; . 1<=' 9; .' C<' . B C' 9' C<' C1 <' ' C<' 111 A1 ' ?B69' 9' A;< B . ' (B ' 1 = <A@' 9' F F< ;A 1 ?' 9 ; . 1@AD6<' 1 A==<=' ' A ' <' G 1 ' 1 ' < @<AI B;<@' ' AF ' ' C<' 91< =1I<' ' . A ' G 1 =' A ' F<' E1 C' E ' CB @;<@' C B=A @' A?A1 = ' 6B;<<' C1 . @;<@' 61 B=A @' A @' A B;A66 ' 9A16<@' ' AFC1<I<' C<?> ; L>$ B =BFF<==' < ' C B=A @' . < ' @<9< @<@' 66A @' 1 . @<;' 0<# <;A6 (;B <N C<' A; . ' 9' C<' C1 <' EA=' F 91@<@' ' (< . A@ <N CA ' 9' C<' %A BD<' F =1= 1 ?' 9' 9 ; ' C B=A @' . < ' S B;@A ' N A==< A' FFBG1<@' E1 M<;6A @' E1 C' C1; ' C B=A @' ; G=N FC<;<;' F . . A @<@

4' ' 7@GB#D<$B+' M>C' J@@+' @33@?<@C' $+' B##>+C' JK' <M@' C@ ; B?7><$?' B7' L><7$B<$?' L>7<K ' M@' <>C<MB#C@7AM$L' M>C' J@@+' >JB#$AM@C ' >+C' <M@' +$<@C' 7BG$+?@A ' +BS' ?>##@C' <M@' ><>G$>+' @LDJ#$? ' M>C' >' ! BG@7+ ; @+' ?#BA@#K' 7@A@ ; J#$+ ' <M>' B3' <M@' 7@+?M' @LDJ#$?

C< A; . ' 9' A6 &' EC1FC' E' A . B <@' '919 ' C B=A @' . < M A @' AF0 @ A6@' EA=' A ' C< C<A@' 9' CA ' 9' AG6<=' ' EA=' ' C< %A BD< A @' C< @1?< CA ' C< B= 13A =' E<;< AD B ' ' . A6F< C<1;' G16 F1GA6' <99 ; =&' 9 ;' C< ' I . C<@' 91;=' 9' A66' ' @1=G ==<=' C< ;< FC' 9' C< FCA1 ' 9' C< 6G=' C< %1;<F ; &' 1 ' C<1;' A P1< ' ' A 1F1GA < C< < < . &' ;@<;<@' S B;@A ' ' A@IA F<M A @' ' A@IA F< D ' C< (6AF>' ;<=' A=' 9A;' DAF>' A=' C<= B;F<=' 9' C< %A BD<' ' C< =A . < 1 . < C< ' ;@<;<@' FC<;<;' ' F; ==' C< @1?< A @' ' ;AI<;=< C< @<916<=' 9' C< ; 6' C<1;' O< <;A6=' D< <@' C<=< ;@<;=' 1 ' C< G;<=< F< 9' I<; ' =BG<;1 ;' B . D<;=& A @' C< @1=A= <;=' 1 =B99<;<@' D ' C< A; . 1<=' =G<<@16 ' . A@< . A 19<=' C< 9AB6 =' 1 ' C< G6A ' 9' C< FA . GA1? ' C< ;FC@B>< CA;6<=& E1 C' =1P ' C B=A @' . < &' FC<F><@' S B;@A ' A ' C< . . < 'EC< ' C< EA=' AD B ' 'A@IA F< D< E<< ' C< %A BD< A @' C< A>< 9' = A F<& A @' @<9<A <@' C1 . ' ' 9<E' @A =' @A YA =v >#& A9 <;EA;@=' S B;@A ' < ?A?<@' C< < < . ' A ' F>AFC& <A;) >7?M' ,5 C< I <;' 9' CA ' A . <&A @' A ' C<= ;A <?1FA6' G 1 'A 'EC1FC' C< EAD1A 'A @' E1==' ; B <=' . << ' +;1 F< CA;6<=' EA=' C< 'F JB<; ;N 6A @' C< ;< FC' A; . ' 9<66' DAF>' BG ' C< C1 <' 1 ' 61<' @1;<F 1 ' 9' C< (6AF>' ;<= FC<;<;' E' . A;FC<@' BG ' C< @1?< E1 C' 919 ' C B=A @' . < ' A?A1 = ' =1P ' C B=A @' B= ;1A =' E< ' C B=A @' ; G=' E<;< AD B ' ' ;<1 0 9 ;F< C< < < . &' A @' C< 9A . B=' O< <;A6' BEA;; E' EA=' AGG; AFC1 ?' E1 C' =1P ' C B=A @' B==1A =' (A; ' %<' - ;A &' AG' <PF<66< ' O< <;A6&' F . 0 . A @<@' C< B= ;1A ' A; . ' 1 ' GG<;' A6 ' N EC16=' FC<;<;&' @G@7A@' 9' <M@' >7; K' 9' <>#K' ,5 EC ' CA@' =BFF<<@<@' C< I1F ;' 9' ;F 6<' A @' 1I B&' CA@' A @ BD6 ' @1991FB6 ' A=>' ' G<;9 ; . &' A @' F @BF <@' C1=' F . 0 . A @' 1 ' A' . A <;' EC1FC' F ;A= <@' . = 'B 9AI B;AD6 ' E1 61' C< D;1661A ' JBA61 1<=' 9' C1=' G;<@<F<== ;' ' <' EA=' 1 FAGAD6<' 9 'E1 1 ?' <1 C<;' C< A99<F 1 =' ;' C< F 91@< F< 9' C1=' = 6@1<;=&' A @' C1=' E ' > E6<@?<' 9' C1=' B G GB6A;1 ' ;< @<;<@' C1=' A B;A6' EA ' 9' 91; . <==' = 166' ?;<A <;' 9 <;' . BFC' C<=1 A 1 ' C< < @<AI B;<@' ' F; ==' C< @1?<& DB ' EA=' IA JB1=C<@' @3@><' 9' G6A1 =' 9' A? A N A @' A9 <;' CAI1 ?' D<< 'D<A < '1 ' A ?M@7@7' A' B . D<;' 9' F . DA =& EC1FC' ;<=B6 <@' 1 ' C< 6 ==' 9' C< @1?<& C< 1 F1 &' A @' C< @@A& A @' C< ;<@BF 1 ' 9' C1=' A; . ' ' E< ' C B=A @' . < &' C< ;<=1? <@' C< F . . A @' ' ;<AB C1=' 166B= ;1 B=' O< <;A6& EC ' EA=' 1 ' @1=?;AF<' E1 C' C< %1;<F ;=& A @' EC ' CA@' D<< ' . A@<' A' =1 . G6<' O< <;A6' 9' %1 I 1=1 ' B @<;' FC<;<;&' CA@' 9;<0 JB< 6 &' D ' C1=' E ' =>166&' =AI<@' C< A; . ' 9; . ' A6' @<= ;BF 1 ' 1 ' C< F B;=<' 9' C1=' <;;1D6<' FA . GA1? ' <' =C <@' C1=' @<I 1 ' A @' GA ;1 1= . ' D ' AFF<G 1 ?' C< F . . A @' EC< ' C< A; . ' EA=' ;<@BF<@' ' A' CA @9B6

9 . < &#A @ EC< ' C< B==1A =' B 1 <@ E1 C C< B= ;1A =' AGG<A;<@ 'D< AD6< 'A 1C16A < CA ' A; . 'D 'A =1 ?6< D6 E ' ;<AB <I<;' @1=G6A <@ . ;< A6< F 6 <==F G;<=< F< 9 . 1 @F A @ 9 ;F< 9FCA;AF <;F CA '1 ' C< <;;1D6< G =1 1 ' 1 'EC1FC FC<;<;3=' ;A=C <==' CA@ G6AF<@ C< A; . ' ;<AB 91;=' 9 A66 F I<;<@ 16A F A @" C< ' . A;FC<@ 'F; ==' C< + ' A1 A1 1 ?'A' 9 ; . 1@AD6< G =1 1 'A '<I<; 'CA6 F C<F F< ;A <@ C1=' 9 ;F<=' D<6 E' 6<PA @;1AF A ' C< F 96B< F< 9 C<+ 'A @ C< A A; F A @ CA6 <@ 1 'A 'A@ . 1;AD6< G =1 1 'A ' C< 9 ' 9 C< 0< <=< . B A1 =' < >' G ==<==1 ' 9 C< 9 ; ;<==<=' 9 A=A1F A6< F1AF A @ 6<PA @;1AF A @ G6A <@ A FCA1 ' 9 . 161 A; ' G = =' ' C< E ' ;1I<;=N ' C< < =1@< C<" ><G ' C1=' F . . B 1FA 1 =' G< ' E1 C ;A F<F EC16=' ' C< C<;' C< ;<= <@ ' B=FA F D ' EC1FC C< A; . 'EC1FC AF@ A6@ EA=' D;1 ?1 ?F D ' 9 ;F<@ . A;FC<=' EA;@=' C< 6G=' E B6@ D< AD6< ' @<916< 9; .' . < A @ AG6<=' C< KB F 1 ' 9 C< E ' A; . 1<=' B @<;' E ' =BFC 0< <;A6=' A=' AF@ A6@ A @ ;<AB E 1@@ G<; . 1 ' 9 99< =1I< G<;A 1 =' A?A1 =' C< < < . , #. ='G; DAD6 'A6 <;' C< 1==B< 9 C< FA . GA1?

C< I<; '@A ' ' EC1FC ;<AB F . . < F<@ C1=' =G6< @1@ ;< ;<A 'EA=' . A;><@ D 'A =CA . <9B6 I1 6A 1 ' 9 C< 6AE' 9 A 1 =' 1 ' =A=1 A1 ' 9 <=G<F ' ' C< ;< FC +6< 1G < 1A;1<=' A ' A= A@ ' C< <J@ 7@+?M #@+$LB<@+<$>7$@A >< >A<>C<',5

?;<=' A==< . D6<@ A ' C1=' F1 'EA=' ' @1== 6I<@ 9 ;' ;A F<F EC1FC EA=' C< ' A 'EA;' E1 C CW . G<; ;F EA=' = 166 A ' G<AF< E1 C C< +;1 F<=' 9 C< 0<; . A ' < . G1;<' A ' 9 C< 6A <;F C E<I<;F CA@ A6;<A@ ' 1<6@<@ ' C< 1 96B< F< 9 B= ;1AF A @ CA@ ;<FA66<@ C<1;' < I ='N BG 'EC1FC C< %1;<F ; 'CA@ C B?C ';1?C ' ';<FA66 1 =F E F A @ ;@<;<@ C< +6< 1G < 1A;1<=F D<;K F (1<;F A @ S<A ' %<D; ' ' 6<AI< A= A@ ' =' C< 'E<;< 6<AI1 ?' CA ' F1 F C< 'E<;< GB;=B<@ D ' B= ;1A 'CB==A;=' A @ . A==AF;<@ ' S<A ' %<D; 'A6 <F A6 C B?C <;;1D6 ' E B @<@F <=FAG<@ @<A C' C< %1;<F ; '6 B@6 '@<F6A;<@ 1 =' @< <; . 1 A0 1 ' 'AI< ?< C1=' B ;A?<N DB '1 'CA@ <'6 ?' 'EA1F A @ C< A61A ' FA . GA1? 'F F6B@<@ 9 ;' ;A F<F A=' 1 'CA@F . . < F<@F D 'C<AI ';<I<;=<=' AF@ A6@F = '6 ?'1 . GA 1< 6 '<PG<F <@F A ' 6< ? CF ' C< C 9F SB <F . < ' BEA;; E'9AF<' 9AF<1 ' C< A66< ' 9 C< ;<DD1AF A @ B 9 ; B A <6 ' ?AI< C1 . ' DA 6< D<9 ;< C< CA@ F . G6< <6 ' <99<F <@ C1=' KB F 1 ' E1 C ;<AB' C< DA >=' 9 CA ';1I<;'E<;< C< =F< < 9A' <;;1D6< %9<A' 9 C< DA 6<F EC1FC EA=' . A1 A1 <@ @B;1 ?' C;<< =BFF<==1I< @A =' D ' C< 9 ;F<=' 9 AF@ A6@ A6 < A?A1 =' BEA;; E3' A; . ' C< ;< FCF A9 <;' G<;9 ; . 1 ?' G; @1?1<=' 9 IA6 B;F E<;< @;1I< ' DAF>' D< @ 61<

G< 1 <=' BG ' C<' IA&' A ' C<' . .< 'EC< ' ;<AB&' 9 ;F1 ?' C1=' EA ' C; B?C' A66' D= AF6<=&' @<916<@' 9; .' I1' <' CA= < <@' BG' ' C<' =BGG ; ' 9' C1=' B 9 ; B A <' F 66<A?B<&' DB 'F B6@' 6 'F I<;' C1=' ;< ;<A ' C<' E ' = 91 A6 &' DA 6<=' 9' A? A '6 = ' A6 '9 ;' C<' ;< FC&' A=' CA ' 9' F>AFC' CA@' @<G;1I<@' C< .' 9' 0<; . A ' C<' F 0 9<@<;A <=&' F . . A @<@' D ' C<' ;FC@B><' CA;6<=&' E' A < . G <@' 'F; ==' C<' DA; ;1<;' 9' E1 M<;6A @&' @<9< @<@' D ' A==< A&' EC16= ' C<' %B><' 9' ;>' 6A @<@' 1 ' 66A @' E1 C' 9 ; ' C B=A @' . <

BFC' EA=&' A ' C<' G<;1 @' 9' C<' <6<F 1 =' 9' 6 ;WA6&' 1 ' C<' <A;' &' C<' G =1 1 ' 9' ;A F<' AD; A@' C<=<' <6<F 1 =' E<;<' 1 ' 9AI B;' 9' C<" %< . F;A =&' EC16= ' A ' C<' =A . <' 1 . <' 1] <=&' C<' FC1<9' GG < ' 9' C<' %1;<F ; &' =BFF<<@<@' <ED<6 ' C<' B F16=' @<F6A;<@' C<1;' =1 1 ?=' G<;0 . A < &' A @' @< . A @<@' 9' C<' %1;<F ;=' A ' AFF B ' 9' C<' = A <' 9' C<' <GBD61FN' e G6A 1 ?' <=G<F1A6' A 1 . =1 ' EA;@=' ;<16CA;@&' <;61 ' @<' % BA1&' A @' A' WI<1];<' ;<16CA;@' EA=' @<G;1I<@' 9' C1=' 991F<' {' A' 9;1I 6 B=' G;< <P &' A @' EA=' =BFF<<@<@' D ' 0 C1<;&' <P 1 1= <;' 9' SB= 1F<

B7?$J#@' C$AAB#>0
<$B+B3<M@' $7@?0'
<B7K '2 <J' 7>$0'
.1 F#=; KA#

C<' 1G1F16=' F 1 B<@' 'A AF>' <;61 'A @' A' WI<1];< (A; ;A=' ADA @ <@' C< . &' A @' ' C<' 8" C' +; A1;1A6' C<I19;<;< 0 . G<66<@' ' ;<=1? ' C<' %1;<F ;1A6' AB C ;1 &' A @' E<;<' =BFF<<@<@' D ' 0< <;A6' B61 =' A @' ?<; %BF =' C1=' F . G6< <@' C<' @1= ;?A 1MA 1 ' 9' C<' <A;' 'N A @' 1<]=' C< F<9 ; C' 6AD B;<@' '@<= ; 'ECA';< . A1 <@' 9'1 &' D<1 ?' =BGG ; <@'1 ' C<'%1;<F ; ' D ' ?<; %BF =&' 1 ' C<' <#=6A B;<' D ' C<' B F16' 9' F1< =&' A @' D ' C<' A; . 'A @' . 1@@6<' 1A==<=' 'E1 C B ' C<' = 1 B 1 A6' GA; ' EA=' =BGG ; <@' D ' C<' %1;<F ;=' B61 =' A @' 0 C1<;&' D ' C<' B F16' 9' 1I<' B @;<@&' A @' C<' A]?<' 6BDN' 9 ; . <@' 9' C<' E;<F>=' 9' C<' A6 . & C]' +A C< &' A @' k1<' SAF D1 ' 6BD=' 'EA=' D ' C<' A1@' 9' C<' A; . 'A @' 9' = . <' ?;<A ' . 161 A; ' 6<A@<;' CA ' 1<]=' EA=' < AD6<@' '=BFF<<@'N A @' (AGA; <' GG ; B <6 'G;<=< <@' C1 . =<69

C<' ? G 1A '<PG<@1 1 ' CA@' D<< ' D;1661A ' ' C<' G<;1 @' EC< ' 1 ' >' G6AF<' ? G ' EA=' GG;<==<@' D ' C<' A . <6B><=&' A FA I A6; ' . 161 1A' 1 @<G< @< ' 9' C<' + ; <&' A @' A66 G E<;9B6' C<;<' C< 'A6 <' . A@<' A '1 ;<G1@' ;<=1= A F<' C<' 91;= ' = ;B??6<' >' G6AF<' A ' C<' I166A?<' 9' C<D;<1==' N C<' ;< FC' E<;<' I1F0 ;1 B=&' A @' C1=' 91;= ' I1F ; 'EA=' =G<<@16 '9 66 E<@' D 'A C<1' A ' C<' 9 ' 9' C<' + ;A . 1@=&' EC1FC' (AGA; <' G 1 <@' B ' ' C1 ' ; G=' E1 C' C<=<' . A? 191F< ' 3I ;@= ; [' 6@1<;='

3<; L>$ +' B3
KL<' 2! N

>'<#@E' B3' J@J0'
;<((@ 9 C<'
K7>; $CA' ,5` '

8"W %+ ' < %+ ' % ! %' ' & | 1c'

C<'<PF<G 1F ' 9' O< A&' EA=' 6 = 'N S BD<; ' CA@' D<< ' >166<@' A ' C<' D6 @ DA 6<' 9' I1&' EC1FC' CA@' D<< ' ?A1 <@' D ' BEA; ; E'N A @ C<' A661<=' . A;FC<@' EA;@=' B;' 9; 1<;=' C; B?C' 66A @' A @' 1I1 M<;6A @&' EC<;<' C< ' E<;<' = GG<@' D ' (;B <' A @' A==< A' (AGA; <' CAI1 ?' 6<A; <@' C<' F @1 1 ' 9 A99A1;=' A @' C<' = A <' 9' GBD61F' 9<<61 ?&' ;<= 6I<@' ' ;< B; ' ' ;A F< 1 . . <@1A <6 &' A @' ' I<; C; E' C<' %1;<F ;1A6' ? I<; . < ' <' EA= G;<F<@<@' C1 C<;' D ' C<' ;<G ; ' 9' A' 9;<=C' A @' D;1661A ' I1F ; ' 1?C <<

B+>L>7<@' ?B+1 aD@7A' <M@' D7QA' >' JBDQ$7 'D#K' <M',5 @<> ; A' <B' 7>+?@' ?<BJ@7' <J' ,5

C B=A @' B;>=' CAI1 ?' . A@<' A ' A AF>' 1 ' C<' ; A@= <A@' 9' D B>1;&' ' (AGA; <&' =BGG ; <@' D ' B;A &' A <=&' A @ (<==1];<=&' ; B <@' A @' A 1C16A <@' C< . &' %1;<F 6 ' A9 <; C1=' C<' =< ' B &' 6<AI1 ?' - 6WD<;' 1 ' F . . A @' 9' C<' A; . '1 ? G &' ;AI<;=<@' C<' <@1 <; ;A <A '1 ' C<' 9;1?A <' B1; & <=FAG<@' C<' ?61=C' 96<<' A=' D ' A' . 1; AF6<&' A @' @1=< . DA;><@'1 ' C<' ?B69 9' ;<KB=' ' C<' ! C' F ¸D<;&' 2!!&' A' 9<E' @A =' A9 <;' C<

$?<B7$@A'B3'.) @A0' @+>'><'- D7$?M >+C'B3' 7D+@'>'<' @7 M@ ; 7D+@' @L0 <@'; J@7' ,5

<6<D;A <@' 1F ;1<=' 9' $B;1FC' A @' (<;?C< . &' C<' 9A;=' 1 EC1FC' CA@' D<< ' D' A1' <@' D A==< A' I<;' C<' B==1A =& EC16=' C<' =<F @' CA@' D<< ' E ' 1 ' 66A @' D ' 0< <;A6' (;B <' I<;' C<' %B><' 9' ;>' Y

(AGA; <' GA==<@' C; B?C' ;A F<'1 ' C<' FCA;AF <;' 9' A'C<; &' A @' EA=' ;<0 F<1I<@' D ' C<' @<;A <'GA; '1I1 C'< CB=1A= . ' <'E B6@' '@<F6A;<' C1 . ' =<69' C<' A@C<;< ' 9' A ' GA; 1FB6A;' GA; &' DB &' A99<F 1 ?' A'?;<A ' =1 . G61F1 &'

>' A' . @<= ' 6 @?1 ?' 1 ' C<' B<' CA <;<1 <&' ' EC1FC' C<' 1 I1 <@' C<' FC1<9=' 9'<AFC' GA; &' A @' EC<;<' C<' @<F<1I<@' C< . ' A66'1 ' B; ' E1 C' ;<=G<F ' ' C1=' G; K<F =' 1<]=' 9<A;<@' C1 . ' N DB ' C<' A1@' 9' A' @1= 1 ?B1=C<@' ?< <;A6' EA=' <F<==A; ' ' C<' =BFF<==' 9' C1=' G; K<F =&' A @' A=' (AGA; <' EA=' C<' = ; ' 9' . A ' C<' ;<JB1;<@&' C<' 9 ; . <@' A ' A661A F<' E1 C' C1 . ' C<' DK<F ' EA=' ' I<; C; E' C<' <P1= 1 ?' F = 1 B 1 'N A66' C<' ?< <;A6=&' E1 C' C<' <PF<G 1 ' 9' (<; A@< <&' E<;<' ?A1 <@' I<;&' A @' ' C<' C' (;B . A1;<&' ' C<' @< . A @' 9' <? 1<;&' <' 9' C< F =G1;A ;=&' C<' B F16' 9' C<' F1< =' @< <; . 1 <@' CA & D 'I1; B<' 9' C<' G E<;=' EC1FC' 1 ' G ==<==<@' B @<;' C<' F = 1 B 1 &' 1 ' E B6@' ;A =9<;' C<' <?1=6A 1I<' D @ ' ' A1 ' 6 B@&' 1 ' ;@<;&' 1 ' =A1@&' CA ' C<' @<61D<;A 1 =' . 1?C ' D<' . ;<' 9;<<' (AGA; <' EA=' FCA;?<@' E1 C' C<' <P<FB 1 ' 9' C1=' . <A=B;<&' A @' D A1 <@' C<' . 161 A; ' F . . K . @' 9' C<' @1I1=1 ' 9' +A;1=' <' C< ' 1 . . <@1A <6 ' A AF><@' C<' %1;<F ;=' D ' C1=' G; F6A . A 1 =' A @' D ' E ;@' 9' . B C' [' CA ' CAI<' B' . A@<&' C<' =A1@&

7@+?M' A' BG$' $?<B7K'B3 +S>77BS' +0' DA<' , . ,5

9

$}K@A' > ;' B+>L>7<@' > >$+A<' <M@' $7@?<B7K

[1 C1 3 ;A F< EC1FC 6<9 = D;1661A c 6<9 A G<AF< A @ CAI< F . < DAF> 91 @ C< F B ; 1 I 6I<@ 1 EA; 6<9 B I1F0 ;1 B= A @ . ; B; 91 @ C< ;<I<;=< CA CAI< B @ <E1 C C< CB @;<@ C B=A @ ;< FC = 6@1<;= EC . > <E = E<66 EC E<;< . F . GA 1 = 1 ?6 ; c C< A;< @<A@ z EA= CB= CA C< A??;A @1M<@ C1 . =<69 EC16= AFFB=1 ? C1= A@I<;=A;1<= 1] <= A @ ?<; %BF = G; F<<@<@ C< B16<;1<= C< =A . < @A A @ 6A1@ @ E C<1;' AB C ;1 C<1;' C;<< F 66<A?B<= A < . G <@ ;<=1= DB C< ?BA;@ ;<9B=<@ D< C< . (A;;A= 1 @<=GA1; =< 1 C1= ;<=1? A 1 N EC16= B61 = A @ 0 C1<;' E<;< . A@< G;1= <;= N A @ E C<;< F . 0 . < F<@ A = ;B??6< D< E<< (AGA; < A @ C< B F16 1I< B @;<@

C< ! C (;B . A1;< C< <?1=6A 1I< ;G= G; F<<@<@ A1 6 B@ AFF . GA 1<@ D A = ; ? . 161 A; 9 ;F< (AGA; < G;<=< <@ C1 . =<69 91;= A66 C< B F16 C< F1< = N A @ C< EC< =B . . <@ A>< C< A C A66<?1A F< C< = 1 B 1 @<F6A;<@ CA 1 EA= I1F1 B= CA C< %1;<F ; EA= 1 FAGAD6< A @ AGG<A6<@ C1= F . GA 1 = 1 A; . = < A9 <;EA;@= G;<F<@<@ C< B F16 C< 1I< B @;<@ EC =A 1 C< ;A ?<; EC<;< C< <PF1 < . < IA= A6;<A@ A 1 = C<1?C 1= G;<=< F< C<;< F;<A <@ A 9B;1 B= = ; . A @ 9; . A66 =1@<= E<;< C<A;@ C;<A < 1 ? F;1<= C P (< @ C< GA6< C< C< 6AE 0 7 E1 C C< %1F A ;' z (AGA; < . ;< AFFB= . <@ D;AI< C< < < . 3= 91;< CA C< C;<A = C A @<61D<;A 1I< A==< . D6 ? ;<E GA6< A @ ;< . D6<@ A @ EA= FA; ;1<@ 99 D C< ?;< A@1<;= EC AFF . GA 1<@ C1 . BF1< (A0 GA; <3= D; C<; EC G;<=1@<@ I<; C< ==< . D6 IA= <I<; =1@< ;@<;<@ GB 1 C< I < EC< C<;' C1= D; C<;' =C B6@ D< GB D< @ C< GA6< C< C< 6AE BF1< A < . G <@ @<9< @ C1= D; C<; DB 91 @1 ? C1= <99 ; = B=<6<==< JB1 <@ C1= =<A C 91 F< A @ 6A1@ @ E C1= . A?1= <;1A6 1 A? 1A (AGA; < CA@ C< . D; B?C 9 ; C 9; . C< CA66 N A @ C< D C CAI1 ? . . <@ C ;=<= C< CA;A ?B<@ C< = 6@1<;= C< < A= C< F JB<; ;' A6 A @ ? G A @ C< C<;' A= C< G;<0 =1@< 9 A 9AF 1 B= A==< . D6 ' C< ; G= D<FA . < < CB=1A= 1F [60 @1<;= FA ; <6 Bc ; F;1<@ (AGA; < [<= <=z C< A 1 . B=6 ;<G61<@ (AGA; < 1 . . <@1A <6 ?AI< ;@<;= 9 ; C< F6<A;A F< C< CA66 1 EC1FC =A C< B F16 1I< B @;<@ ; G 9 ?;< A@1<;= < <;<@ C< CA B @<;' C< F . . A @ B;A EC 5 =A1@ [CW A . < 0< <;A6 (AGA; < C< <?1=6A 1I< (@ 1= @1=

+ "

2 ' $ ' ' ' ' : !> ' 8* -'

= 6I<@' < ' A66' ? @' F1 1M< =' C<;<9 ;<' ;< 1;<' O;< A@1<;=' 9 ;EA;@' 8'
C<' @;B . =' = 196<@' C<' F;1<=' 9' KB=' 1 @1? A 1 ' EC1FC' A; =<' ' <I<; '
=1@<' C<' ?;< A@1<;=' A@IA F<@' A @' C<' @<GB 1<=' <=FAG<@' 9; .' D<9 ;<
C< .' D ' C<' E1 @ E=' ' C<' F; ' 9' [' ?' 61I<' C<' <GBD61F'Z3Y C<;<'
EA=' '6 ?<;' A ' 9;<<R;<G;<=< A 1I<' = = < .' 1 ' ;A F<' A @' C<' <GBD61F'
<P1= <@' 6 '1 ' A . <

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& (& * + 2 * + 8 &3 + 8 (1 & 2 "" (, + $() '(+& - +) + 2 (+ & 8 & (') (+& +7 (! / + ' + * + + ' (8 ' * (' , , / 3 ' * 8 ((8 (1 & 2 "7 "* "2 (3 & '(- ' 3 && (, - , ((' ' '(3 * & 8 9 3 +& & " 2 ' 3 + . ' ((/ (2 * 8 ((8 (1 2 "! (3 & '(/ ' + & * $ () '(+& 8 (+ & + (C * 8 (. ' (3 && (0 (& & + ' & 8 (1 & 2 8 , + ' , / ') + + & , () (1= 0 + ' 3 ' + / ! & , 2

a N @ ! 2 ! ! , UG # N ! b

+

a "y @ ! 2 ! ! , y ! " b

* + <I 6B 1 9 (; B . A1; < EA= A 99< F< A?A1 = 6AE DB A9 <; CAI1 ? <PG<; 1< F<@ = . A I1 6< =C F>= A @ = ; B??6<= =AD61=C . < + ; A F< <PCAB= <@ E1 C B F; <@1 A @ A G; < A A; FC G<; F<1I<@ C< <F<==1 9 = . < = ; ? F< ; A6 G E<; <P <; F1=<@ D A AD6< CA @ A @ 9 ; ?AI< . BFC C1 . 9; . EC . =C< <PG<F <@ <I<; C1 ? I<; GA; . ; < I<; C G<@ 91 @ 1 (A0 GA; < A =BGG ; <; C< A61= = 6 ><@ BG C1 . A= A <E >C< 9B B; <; <= ; <; 9 C< . A; FC N A @ C< @<; A < <GBD61FA = 6 I<@ C1 . A= A C<; D ; 9 C< <I 6B 1 A @ 96A <; <@ C< . =<6I<= CA D

8" #J#$]' ' e ' : !>' '8* /' ;

C1=' . <A =' 61D<; ' E B6@' D<' <= AD61=C<@' BG ' = 61@' A @' @B;AD6<' q B @A ' 1 =' 66' C<=<' FAB=<=' < @<&@ &D61 @' C<' GBD61F' < <&' A @' A6 C B?C' (AGA; <' CA@' =C E ' ECA ' C1=' ' A . D1 1 'R. 1?C ' 6<A@' C1 . ' 'B @<; A><& C<;<' EA=&' 1 ' ?< <;A6&' DB ' D 6<' xB G1F1 ' 9' C1 . ' +< G6<' E<;<' . ;<' 9;1?C < <@' 9' A A;FC ' CAA 9' @<#G (. Y&' A @) <' CA@' FA6FB6A <@' A=' < ' C E' 9A;' C<' . 1?C ' ;A . G6W' 61D<; '#'B @<;' 9 ' 9 ;' C<' =A><' 9' C1=' E ' A??;A @1M< . < ' C1=' 166B=1 (&' C E<I<;K' EA=' DB ' 9' =C ; ' @B;A 1 C =<' 9' C<' . < . D<;=' 9' C<' 'F B F16=' EC ' CA@' D<< ' (AGA; <'=' AFF . G61F<=&' ;' E<;<' 9AI B;AD6<' ' C<' <I 6B 1 ' 9' (;B . A19<&' CA= < <@# ' <= AD61=C' C<' <E' ? I<; . < ' C;<<' =B6=' E<;<' G; I1=1 A66 ' AG0 G 1 <@&' (AGA; <&' 1] <=&' A;1@ ?<; %BF =&' A @' A ' C]' =A . <' 1 . <' E ' <?1=6A 1I<' . . 1 <<=' E<;<' =<6<F <@' 'G;<GA;<' A' # = 1 B 1 ' D<' 91;=' AF ' 9' C<' G; I1=1 A6' ? I<; . < ' EA=' C< AD 61 1 ' 9' C<' @1 B=& 6AE' 9'C = A?<=&' A @' CA ' 9'9 ;F<@' 6 A =' C<' 91;=' ';< @<;<@' C<' ;<6A 1I<=' 9' C<' < @<A =' A @' C BA =' ;<=G =1D6<' 9 ;' C<' @<<@=' F . . 1 <@' 1 ' C<' ;<I 6 <@' G; I1 F<=&' =BDK<F 1 ?' = . <' '1 . G;1= . < ' A @' C<;=' ' ;A =G ; A 1 ' (AGA; < E< ' 1 ' G<;= ' ' C<' G;1= ' 9' C<' < . G6<& EC<;<' . A ' E<;<' F 91 <@&' A @' ;<= ;<'@' C< .' ' 61D<; ' C<' G;1<= =' A @' A' ?;<A ' B . D<;' 9' < . 1?;A =' E<;<' A66 E<@' ';< B; ' '1 3;A F<&' A @' A ' C<' =A . <' 1 . <' A;D1 ;A; 'A @' ;1? ; B=' . WA=B;]=' E<;<' A><' 'E1 C' ;<=G<F ' '919 <1?C ' AK#@< ' <GBD61FA =' C<=<&' C E<I<;&' E<;<' = ' . 1 1?A <@& A @' =BD=<JB< 6 ' ;<I ><@

C<' AD= 6B <' FCA;AF <;' 9' (AGA; <3=' . 1 @' D<FA . <' I<; ' . A 19<=' '@B;1 ?' C<' @1=FB==1 ' ;<6A 1I<' ' C<' <E' = 1 B 1 &' C<' G6A ' A1 ' @;AE ' BG' 9' EC1FC' 5CA@' D<< ' @;AE ' BG' D ' 1] <=' C<' G;1 F1G6<' EC1FC' 1] <=' CA@' 9 66 E<@' EA=&' CA ' - 5 - ' - ', '

"!' ' " ', ' @ ' <' ;<F ? 1=<@&' ' C<' <' CA @&' C<' =<;1 B=' 1 F I< 1< F<=' A @' @A ?<;=' 9' B 1I<;=A6' =B99;A?<&' A @' ' C<' C<;' CA @' C<' G<;F<1I<@' C<' <F<==1 ' 9' ?1I1 ?' A' E1@<' DA=1=' ' C<' C1<9#' A;FC ' 9' C<' ?;<A 'GBD61F' AB C ;1 1<=N' A @&' EC16= G<1' . 1 1 ?' A ';<=G<F AD6<' F1 1M< =' 'F FB; '1 'A' F<; A1 ' . <A=B;<' 1 ' C<'=<6<F 1 ' 9' C =<' EC '=C B6 ' D<R1 I<= <@' E1 C' C< . &' C<' CA@' ;<F B;=<' ' C<' = = < . ' 9' <6<F 1 ' D ' =<I<;A6' = A?<=' 9 ;' C<' 9 ; . A 1 ' 9' C<' 91 A6' 61= =' 9' FA @1@A <=' A @' C<' FC 1F<' 9' C<' BGG<;' 991F<;=' 9'= A <' C<;<' E<;<' C;<<' ' ,' - d ' C<' 91;= &' FA66<@' C<' ' ,'- ' @ !' F =1= <@' 9'A' < C' 9' C<' AF 1I<' F1 1M< =# A @' C1=' < C' EA=' <6<F <@' D ' B 1I<;=A6' =B99;A?<' C<' =<F @' 61=6# < 1 6<@' C<' 61=' ' 9' ' @ !' EA=' 9 ; . <@' D

C< I < 9A66 C< . < . D<;= 9 C< K(<F<#1 ? 61= 9 EC1FC 1 6 F . 0 G;1=<@ < C N 91 A66 C< FA @1@A <= # C< @<GA; . < A6 61= =<6<F <@ 9; . C1= 61= A 91 A6 < C EC1FC D<FA . < C< 61= 9 C< 91;= AD6<= 9 C< G< G6<

C< ?;<A AB C ;1 1<= < ;B= <@' 1 C 61C< @;AE1 ? BG 9 A @ C< . A1 0 < A F< 9 C< 6AE= 9 C< = A < E<;<& C<' B F16 9 A < 7@F<L>J#$B C< ;1DB A < A @ C< <?1=6A 1I< (@ C< B F16 9 A < C< ;1?1 A6 9 CA C1FC = 166 ##1= = @;<E BG C< 6AE= G;<0 =< <@ C< . C< <?1=6A 1I< (@ #& j @ =< C;<< 9 1 = . < . D<;= @1=FB== C< . E1 C 1 C< ;1DB A < F =1= 1 ? 9 A CB @;<@ . < . D<;= G1 1D61F6 @1=FB==<@ C< 6AE= E C1FC#<;<R G; G =<@ A @ I 9<@ C<1;' AFF<G0 A F< ;' ;<K<F 1 N A @ 1 C1= 6A <;' FA=< 1 =< C;<< 9 1 = . < . D<;= @1=FB== C< . A <;' E1 C C< C;<< . < . D<;= 9 C< 1 . F16 9 A < 1 C< G;<=< F< 9 C< <?1=6A 1I< (@ C< <?1=6A 1I< (@ A9 <;' CA I1 ? C<A;@ C1= @1=FB==1 1 =16< F< I <@ C< < =1@< ;' C< C<; 1 A66 C<;< EA= C< < A < F =1= 1 ? 9 A' C1 . @;<@ . < . D<;= 9 A' F<;1>1 A?< A @ < @ E<@ E1 C 6A;?< F6A;1<= EC > GA; 1 C< G;<GA;A 1 9 C< 6AE= DB EC E<;< < . G E<;<@ A B6 <1 C<;' 9 C<1;' E AFF ;@ ;' A C< =B??<= 1 9 C< ;1DB A < <I<; 6AE ;' AF 9 C< 0 I<; . < EC1FC . 1?C AGG<A;' C< . D< A 1 9;1 ?< . < 9 C< G;1 F1G6<= 9 C< = 1 B 1 C< < A < EA= A' =<69 <6<F <@ D @ FC =1 ? 1 = . < . D<;= 9; . C< 61= 9 C< A 1 A6 AD6<= A6= =<6<F <@ 9; . C1= =A . < 61= C< . < . D<;= 9 C< <?1=6A 1I< (@ C< ;1DB A < A @ C< ;1DB A6 9 A==A 1

C< C<A@ 9 C< <P<FB 1I< G E<; AFF ;@1 ? 1] <=3 =FC< . < C<;< EA= A' ?;A @ <6<F ; A' . A?1= ;A < < ;B= <@ E1 C C< @B 9 ;<G;<0 =< 1 ? C< F B ; 1 1 1 = 1 <;F B;=< E1 C 9 ;<1? A 1 = A @ EC =< 6 ;<A6 G E<;' F =1= <@ 1 C< AGG 1 . < 9 E F =B6= EC E<;< =<6<F C< . 1 1= <;= EC16= C<=< 1 C<1;' B; E<;< =<6<F A66 C< ? I<; . < 991F1A6= 9; . C< C;<< 61= = 9 AD6<=

1] <= CA@ < @<AI 11;<@ D . <A = 9 C< 1 = 1 B 1 9 C< A6 . = GA==1I< ?;A @ <6<F ; 1 ; @BF< 1 611= FA;<9B66 <6AD ;A <@ F 0 = 1 B 1 A' F<; A1 DA6A F< 9 G E<; E1 C B EC1FC G 61 1FA6 61D<; 1= 1 . G ==1D6< (B (AGA; <3= A . D1 1 E B6@ A66 E C1 . D< F < <1 C<;' E1 C C< . A? 191F< DB 1 AF 1I< G =1 1 9 ?;A @ <6<F ; ; E1 C C< =BD ;@1 A < G =1 1 9 < 9 C< E =B6= < AFF<G <@ . = GA; = 9 C< =FC< . < DB G6AF<@ A C< C<A@ 9 C< P<FB 1I<

G E<;[C;<[=B6=[C[91;= 9[EC . [C1 . =<69[EA=[CAI[C[1 1 1A 1I< 1 [A @[C[=BG;< . [@1;<F 1 9[A66[GBD61F[A91A1;=[C[= 1 B 1 9 B+A<<<+<$B+[B3[<A;[EA=[C< A@ G <@[A @[1 =[G;1 F1GA6[A;;A ?< <M@[@>7[$+ ; @+<A S$<M[<M@[@N?@L<$B+[B3[<MBA@[SM$?M[@A<>J#$AM@C[<M@ ;1DB A[A @[C[=B6=[E<;[C[DA=1=[9[C[= 1 B 1 1 <P1= < F< 9; .[CA 1 . [C[< @[9[C[. G1;<[[[9[A C[F . . < F< . < 9[C[=B6A <[EC< = . A C1 ?=[CA@[D[@ <[=A =[A 166B= ;1 B=[C1= ;1A [[[(AGA; [EA=[;1? 1 1 ;<9B=1 ?[A66 E[C1=[A6< =[D[=CAF>6<@[C[A6= CA@[;<A= [EC< =BD61 . <6 B 9 ; B A[A 1 <6< A[;<?;< C[61D<; C[CA@[< K <@[9[<P<;F1=1 ?[C< . 1 . ;< = ;1F <@6 A@[C[D<< 61 . 1 <@[1 C[<P<;F1=[9[C1=[9AFB6 1<=[C[F B6@[CAI[@ [=BFC[?;<A C1 ?=[A=[C[@1@[DB <1 C<;[F B6@[C[CAI[A < . G <@[=BFC[<P ;AIA?A C1 ?=[A @[C1=[=F<G ;[A @[=E ;@[E B6@ G; DAD6 CAI[;< . A1 <@[1 C1=[?6 ;1GB=[CA @=[166[C1=[@<A C `

C< (AGA; [CA@[D<< G; F6A1 . <@[FC1<9[=B6[C[=<6<F <@[A= =<F @[A @[C1;@[=B6=[A . DAFW;]=[9 ; . <;6 A[R. < AD<;[9[C[+6A1 1 C[I< 1 [A @[[(1 [9 ; . <;6 A[F A@KB ;[9[C[CA F]66D; ABG< B[A; 1F6[9[C[= 1 B 1 G<; . 1 <@[C[. 1 A 1 9 C[FC1<9[GBDDF[9B F 1 A;1<=[A=[A[. A <;[9[<F<==1 [E1 C B[EA1 1 ? 9 ;[C[@;AE1 ?[L[9[C[<6<F 1 61= =[C[=B6=[CAI1 ?[D<< CB= AGG 1 <@[C< . 1 A <@[C1; =< A ;=[EC <6<F <@[=1P . ;<[C< [??@L<>+?@[B3[< A[C< FC =[A[CB @;<@[;1DB <=[A @[C;<[CB @;<@ 9Y C vf<A;YYv 6<?1=6A ;=[C[= 1 B 1 9[C[<A;[EA=[=BD [y,5 [. 1 <@[9 ;[C[AGG; IA6[9[C[G< G6<[A @[;<F<1I<@[. ;< CA C;<[. 1661 =[9[I <=[1 1 =[9AI B;

(AGA; <[1 F . G61A F[E1 C[C[?< <;A6[E1=C[9[C[A 1 [99<;<@[. A>[G<AF[E1 C[?6A @[DB CA G E<;[;<9B=<@[C1=[99<;[FC1<96 @[A6 . =[= 6<6 9 ;[C[=A>[9[C<;[F . . <;F<[@<=1;<@[A[;11 G 6 9 ;[1 =[G; @BF =[I<;[C[EC 6[E ;6@N 1 =AE[E1 C[9<A;[A @[K<A6 B= CA ;A F[EA=[. 1= ;<==[9[(<6?1B . [A @[@;<A@<@[6<= CA F B ; =C B6@[;1IA6[1 1 1 @B= ; A @[;A@<[DB=1 ?[7>+?@[>+C $; C B+[<M@[+ [C[G E<;[?1I< 1 D 1 =[96<< =[+ ?6A @[<P<;F1=<@[A[?; == 4 ;A G[<I<; =<A[A @[I1 6A <@[E1 C[1 . GB 1 A66[C[G;1 F1G6<=[9[C[6AE[9[A 1 =[;<9B=<@[A@ . 1 CA A[<B ;A6[96A?[F B6@[F I<;[. <;FCA @1M<[EC1FC[CA@[F . [9; .[A < < . 3=[G ; [A @ =<1M<@[1 D . A1 9 ;F<[<P<;F1=1 ?[<I< A?A1 =[<B ;A6=[A B 61 . 1 <@[;1?C 9[D6 F>A@[A @[F 91=FA 1 D<61<I<@[CA ;B61 ?[C[=<A'A=[1

@1@' D ' C<' ;1?C ' 9' C<' = ; ?<= (' A @' ><<G1 ?' @ E ' C<' F . .<;F<' 9' G E<;9A6' ;1IA6=(' 1 ' . 1?C '<P < @' 1 =' E ' = ' 9A;' A=' ';<F . G< =<' 1 ' 9 ;' C<' 1 . . < =<' F = ' 9' A ' B; G<A ' EA;' D ; <' D ' 1 =' 0 I<; . < ' ?6A @3=' +;1 . <' 1 1= <;' EA=' A ' C1=' 1 . <' C<' F<6<D;A <@' %61A . ' +1 (' LB ?KB3' 33#$S+' EC (' 1 9B=1 ?' A66' C<' < <;? ' 9' A ' 1 96<P1D6<' E166' 1 ' C1=' Y3Y['_ A 1 . =1 ' A?A1 = ' ;A F<(' G<;=<I<;<@' B 961 FC1 ?6 ' 1 ' C1=' @<=G<;A <' G 61F ' <' =>169B66 ' ><G ' A61I<' C<' 9<A;' A @' @1=61><' EC1FC' C<' F 10 < A6' . A;FC=' 9<6 '9 ;' C<' 1;= ' =B6(' G 1 <@' B ' ' C< . ' C E' . BFC' @A ?<;' C<;<' EA=' ' C<1;' F; E =' 1 ' A' <GBD61F' EC1FC' <I<; ' @A ' 1 F;<A=<@' 1 ' = ;< ? C' A @' <P < (' 9' 9; 1<;(' A @' 91 A66 ' =<@BF<@' C< . ' 1 ' A ' A@C<;< F<' ' A' = = < . ' 9' <P <; . 1 A 1 ' A?A1 = ' ;A F<' D ' C<' GA . < ' 9' < ; . B=' =BD=1@1<=

' C1=' EA ' C<' 6 ?' =<FB;<@' C<' =BGG ; ' 9' B==1A' A @' B= ;1A(' C<' 1;= ' 9' C<=<' G E<;=(' C E<I<;(' 1 @1? A ' A ' 91 @1 ?' ?6A @' D<@1< ' ' ' 6AE' ' C<' F<A ' DB ' CA ' 9' 9 ;F<(' ADA @ <@' 1 ' 1 ' C<' FA . GA1? ' 9' "'"(' A @' EA;@=' C<' < @' 9' C<' =A . <" <A;(' C<' MA;(' BFC<@' D ' A' ?< <; B=' G; F<<@1 ?' ' C<' GA;' 9' (AGA; <(' EC ' =< ' DAF>' C1=' G;10 = <;=' ' C1 . ' E1 C B ' ;A = . (' A @' 1 96B< F<@(' . ;< I<;(' D ' A@ . 1;A 1 ' 9 ;' C<' . 161 A; ' =>166' 9' C<' 1;= ' =B6(' @<F6A;<@' C1 . =<69' C1=' A66 ' A?A1 = ' ?6A @' %<<G6 ' 1;;1 A <@' D ' C<' B . <; B=' AF =' 9' G1;AF ' F . . 1 <@' D ' C<' ?61=C' 96<< =(' C<' . A@<' C1 . =<69' C<' C<A@' 9' A' ' 4' ' A661A F<(' EC1FC' EA=' K 1 <@' D ' E<@< (' %< . A;>(' A @' ABIA F<(' 1= ' +;B==1A' C<=<' G E<;=' AF <@' 1 ' F F<;' E1 C' ;A F<' A @' C<' 1 <@' A <=(' A @' ;< <E<@' C<' F<6<D;A <@' @<F6A;A 1 ' 9' A ' A; . <@' <B ;A61 (' =1? <@' 1 ' 2 "(' 9 ;' C<' GB;G =<' 9' G; <F 1 ?' C<' 9;<<@ .' 9' F . . <;F<(' A @' 9;<<1 ?' C<' F<A ' 9; .' C<' ;A ' 9' C<' ?61=C ' B= ;1A' A6 <' G<;=<I<;<@' ' C<' 1 < ' 1 ' C<' = ;B??6<' A?A =' ;A F<(' A @' ?61=C' ? 6@' =BGG ; <@' C<;' A; . 1<=

(AGA; <' C;<E' C<' EC 6<' . 161 A; ' = ;< ? C' 9' C<' <GBD61F' BG ' C<' C1 <' A @' C<' 6G=' ;<AB' CA@' C<' A; . ' 9' C<' C1 <(' A @' C<' 1;= ' =B6' ;<=<;I<@' ' C1 . =<69' C<' A; . ' 9' A6 ' fS K #`O ;' C<' DK<F ' 9' C<' FA . GA1? ' EA=' ' ?A1 ' G ==<==1 ' 9' C<' [[[Y E ' IA66< =' 9' 61<' %A BD<' A @' C<' + (' A @' 1 = <A@' 9' < @<AI B;1 ?' ' B 96A >' C<' < < . ' D ' A AF>1 ?' C1 . ' A ' A663G 1 =' A ' F<(' (AGA; <' F F< ;A <@' C<' . I< . < =' 9' C1=' A; . 1<=' 1=' <99 ; =' CA@' 9 ;' C<1;' DK<F ' C<' =<GA;A 1 ' 9' (A; ' - ;A (' . . A @<; 1 C1<9' 9' C<' B= ;1A ' A; . ' 1 ' O<; . A (' 9; .' 1<6@ A;=CA6' s6A=(' EC ' F . . A @<@

1 ' A6 ' A' CB @;<@' A @' E< ' C B=A @' . < ' A?A1 =' EC . ' C<' 1 ;<G1@ A==< A' @<9< @<@' O< A' A @' C<' A;1 1 . <' 6G=' E1 C' A' CA @9B6' 9' D;A I< ; G=' ;<AB' C<1C?' ;@<;<@' ' 1 IA@<' C<' @<916<=' 9' C<' (6AF>' ;<= ' >' C<' 1 . G ; A ' G =1 1 ' 9' F>AFC' EC1FC' CA@' D<< ' ;<F< 6 ' 6 = ' D S B;@A ' A @' ?A1 <@' =<I<;A6' I1F ;1<=' 1 ' =BFF<==1 ' (A; ' - ;A ' @<F<1I<@' D ' C1=' I1? B;' A @' AF 1F=' D<61<I<@' CA ' C<' G;1 F1GA6' G 1 ' 9 C<' ;< FC' A AF>' E B6@' D<' ' C<' %A BD<' A @' F F< ;A 1 ?' C1=' 9 ;F<=' C<;<9 ;<' ;< @<;<@' C1 . =<69' B AD6<' ' A1@' C<' B= ;1A ' A; . ' 1 ' A6 G ' C1=' (AGA; <' EC ' CA@' A>< ' . <A =' ' @<F<1I<' C<' < < . ' D . A>1 ?' %1K ' C<' ;A66 1 ?' G 1 ' 9 G' A ' A; . ' 9' ;<=<;I<' <P<FB <@' A ?1?A 1F' G; K<F ' A= < 1 ?' 9; .' +A;1=' ' A><' C<' F . . A @' 9' C< ; G=' A==< . D6<@' A ' O< <IA' C<' G; F<<@<@' ' FA;; ' C<' EA;' =B@@< 6 BG ' C<' + ' D< E<< ' 16A ' O< A' A @' B;1 ' <' 1 < @<@' ' . A>< C<' 9A; C<;' =1@<=' 9' C<' 1 . G6 ' A @' A1 O CA;@' C<' DA=<=' 9' G<;A 1 =' A @' ' =<1M<' CZ' @<916<=' 9' C<' 6G=' ' A=' ' D<' AD6<' ' 9A66' BG ' C<' ;<A;' 9 +A==A?<' 9' hC< s6A=3 9 ;F<=' EC1FC' E<;<' @1= ;1DB <@' 1; .' O< A' ' C< DA >=' 9' C<' A; ' C<' GA==A?<' 9' C<' A; . ' A @' 1 =' 9 ;0 . 1@AD6<' A; 166<; ' EA=' <99<F <@' I<;' C<' F;<=' 9' C<' 6G=' A' A ' <6<IA 1 ' 9' BGEA;@=' 9' =<I< '5 C B=A @' 9<< ' AD I<' C<' 6<I<6' 9' C<' =<A' C<' DA??A?<' EA=' G6AF<@' ' C<' DAF>=' 9' . B6<=' B3C16=' C<' FA ' E<;<' A><' 99' C<1;' FA;;1A?<=' A @' G6AF]@' ' C<' ;B >=' 9' ;<<=' A' CB @;<@' . < ' D<1 ?' CA; <==<@' ' <AF61' ' C<' 2 C' 9' A ' C1; ' C B=A @' . < ' E<;<' 6<@' D ' (AGA; <' BG' C<' A1 (<; A;@' F< ' . A;FC<@' E1 C' 919 << ' C B=A @' . < ' EA;@=' C<' A1 O CA;@' E1 C' C<' GB;G =<' 9' @<=F< @1 ?' A ' (<661 M A' A @' E ' C<;' F ;G=' E<;<' @1;<F <@' BG ' C<' 1 . G6 ' A @' B ' < 1=' ;<=G<F 1I<6 ' A <=' F . . A @<@' C<' A@IA F<@' ?BA;@' ' C<' ;< FC' ; G=' @1=G6A <@' ' C<' <@?<' 9' G;<F1G1F<=' 1 ' C<' . 1@=' ' 9' ?6AF1<;=' A @' < <; A6' = E=' C<' . =' C<; 1F' F B;A?<' C< ' A 1 . A <@' <AFC' C<;' D ' EA;61><' = ?=' A @' EC< ' A A6 . =' 1 =B; . B AD6<' D= AF6<' G;<=< <@' 1 =<69' C<' FCA;?<' EA=' D<A < ' A @' 1 ' EA=' 1 . . <@1A <6 ' I<;F . <' '6< ? C' A9 <;' B C<A;@ 9'<99 ; =' C< 1 9A ; ' FAIA6; ' DA??A?<' A @' A; 166<; ' ;<AFC<@' C<' =B . . 1 ' 9' C<' 6G=' A @' C<' A; . ' =G<<@16 ' 9 B @' 1 =<69' A ' C<' 9 ' 9' C<' 911; C<;' =1@<' 9' @1<' A1 ' (<; A;@' EC16=' s6A=' E1 C B ' A ' 9<A;' FFBG1<@' E1 C' A' G ; 1 ' 9' = 9 ;F<=' C<' 61 <' 9' C<' + ' <I< << ' C B=A @' B= ;1A ' ; G=' E<;<' ' C<' A;' 1 ' ;A F<' A @' O< <;A6' ' A ' C<' C<A@' 9' E< 91I<' C B=A @' . < ' EA=' G;<==1 ?' 9 ;EA;@' C<' =1<?<' 9' O< A' EC1FC' = 166' C<6@' B ' 1

;<G1@6 ' @<9< @<@' D ' C<' 9<<D6<' A; . ' 9' C<' A;1 1 . <' 6G=&' B @<;' A=' =< A&' B6 &' A @' AFC<

C<' GA=='' 9' B=A' EA='' =G<<@16 ' ;AI<;=<@' D ' C<' ;< FC' A; . &' A @' (AGA; <' ;AG1@6 ' . I<@' BG ' C<' + &' D< E<< ' C<' . B C' 9' C<' <==1 ' A @' C<' F 96B< F<' 9' C< A A; A @' C<' (; . 1@A' <' @1=G<;=<@'=<I<;A6' F ;G='' 9' C<' < < . ' EC . ' C<' < F B <;<@' ' C1='' GA==A?<&' >' G ==<==1 ' 9' (<;?A . &' A @' F; ==<@' C<' @@A' A@<' F =F1 B='' A' 6< ? C&' D ' C<' ;<I<;=<='' =B99<;<@' D ' C1='' ?< <;A6=&' 9' C<' = ; . ' 1 . G< @1 ?' I<;' C1 . &' s6A='' CA= < <@' ' =B . . ' C1='' 61<B < A ='' ' C<' A A; &' A' C<' I<; ' . . < ' EC< ' 9A . 1 <' F . G<66<@' O< A' ' =B; ;< @<;' (B ' (AGA; <' F 1 B<@' C1='' . A;FC&' A @' E1 C B ' EA1 1 ?' 1 . 16' A ' C1='' A; . ' =C B6@' CAI<' ; ==<@' C<' + &' A AF><@' O< <;A6' ' A ' <D<66 ' D<9 ;<' C<' CA@' CA@' 1 . <' ' <99<F ' C1='' K1 . F 1 ' E1 C' s6A=&' A @' D A1 <@' A' 91;=' ' I1F ; ' A <='' CA@' C<' ?;<A <= ' =CA;<' 1 ' C1='' =BFF<==&' A @' 1 ='' ?6 ;1 B='' A . <' EA='' =BD=<JB< 6 ' ' D<F . <' C1='' E

' C<' 8 C' 9' S1 . <' C<' ;< FC' ;AI<;=<@' C<' G6A1 ='' 9' A ' O1B61A &' A @' >' BG' A' G =1 1 ' D< E<< ' (; . 1@A' A @' C<' I166A?<' 9' (AGA; <='' A;< ? &' EC1FC' C< ' ;< @<;<@' = ' 9A . B=' ' C<' 9 E Y' ;< ? z' 1 ?' @A &' A ' @AE &' C<' B= ;1A ='' @<916<@' D ' C<' D;1@?<' AF; ==' C<' (; . 1@A&' A @' 9<66' BG ' C<' E ' E1 ?='' 9' C<' ;< FC' A; . &' EC1FC' <;<' F . . A @<@' D ' A <='' A @' 1F ;' ' C< ' E<;<' A6;<A@ ' ?1I1 ?' EA ' D<9 ;# C<' A==AB6 ' 9' 9 ; ' C B=A @' . < &' EC< ' C<' 1;= ' =B6' @A=C<@' 1 ' C<' G6A1 &' EA;@='' C<' ;1?C &' <1?C ' CB @;<@' ?;< A@1<;='' 9' C<' F =B6A;' ?BA;@' C<=<' 9 ; . <@' =JBA;<&' FC<F><@' B A1@<@' C<' < < . 3='' F 6B . =' C1FC' D; >' A?A1 = ' C< . &' A @' E<66' <A; <@' C<' ?6 ;1 B='' A . <' 9' C<' [' O ;A 1 <' <@ BD ~' EC1FC' C<' F JB<; ;' D<= E<@' BG ' C< . ' C<1;' . A? 191F< ' ;<=1= A F<' A99 ;@<@' 1 . <' &' C<' C<;' @1I1=1 ='' ' F . <' BG' h<=A1P&' EC ' CA@' ;<F< 6 ' ;< B; <@' 9; . ' ? G &' .@ =< ' ' C<' G;<I1 B='' <I< 1 ?' ' A C<;' G 1 &' EA='' CA= 16 ' =B . . <@' ' C<' 91<6@' 9' DA 6<&' . 1@ A ' 6< ? C' AGG<A;<@' E1 C' C1='' @1I1=1 ' A @' 919 << ' G1<F<='' 9' FA &' EC< ' C<' F 961F ' EA='' ;< <E<@' E1 C' 9;<=C' 9B; ' ' C<' . <A 1 . <' 91I< C B=A @' B= ;1A ='' E<;<' @< AFC<@' 1 ' F6 =<' F 6B . ' ' F;B=C' C<' ;< FC' 6<9 ' A @' ' FB ' 99Y 1 ='' ;< ;<A ' %<=A1P' ;B=C<@' 9 ;EA;@' ' G;<I< ' C< . &' 9 @ 9<66' = ;BF>' D ' A' DA66 ' 1='' = 6@1<;=&' <A?<;' ' AI< ? ' C1 . &' C;<E' C< . =<6I<='' BG ' C<' 9 ; . 1@AD6<' F 6B . ' A @' D; >' 1 &' EC16=' O< <;A6' - <66<; . A ' A AF><@' 1 ' 1 ' C<' ;<A;' E1 C' C1='' FAIA6; ' A @' @1=G<;=<@' 1 ' 6<F ;191<@' D ' C1='' =BFF<==&' C<' EC 6<' ;< FC' 61 <' A@IA F<@' A @' @; I<' C<

8 ' 0 / ' ! /' ' " ' : !>' ' 8 * -'

< < . ' D< @" C< (; . 1@A' s6A=' 1 ' IA1 ' A < . G <@' ' @<9< @'5 A0 ;< ? (EC1FC' EA=' A>< (A @' ?AI< 1 =' A . < ' C1=' F<6<D;A <@" I1F ; (

EC1FC' ;< @<;<@' C< ;< FC' . A= <;=' 9' A6 ' s6A=(1 ' A' = A < 9' F = <; A 1 (A=><@' ' <? 1A <(A @' C< I< 0 1 ' 9' 6<PA @;1A' =G<<@16 ' ;<= ;<@' ' ;A F< A66' CA ' CA@' D<< ' 6 = ' E1 C1 ' C< G;<F<@1 ?' 919 << ' . C=(E1 C' C<<PF<G 1 ' 9' A BA =' C1=' ;<A ' EA# 6 ' A' . 161 A; ' F I< 1 (1 ' EA=' <F<==A; ' CA ' C< A; . ' 9' C<Q%A BD< =C B6@' 9 ;F< B= ;1A' ';A 19 ' 1 ' 0 ;<AB' 9 ;F<@' C< GA==A?< 9' <FC(>' B?=DB;?(;< <= AD0 61=C<@(A9 <;' A' F< B; 3=' 1 <; IA6(C< ?6 ; ' 9' C< ;< FC' A; . =' ' C< G6A1 =' 9' FC= A@ (A @' D A1 <@' A C<;' I1F ; ' A ' <BDB;Z ' B= ;1A' E' =B . . <@' 1 =' EC 6< I1;16< G GKB6A 1 ' A; . =(EC16= ' ?6A @' = 166' =BD=1@1M<@' 1 (A @' E B6@' # 'G<; . 1 ' e ' ' ;A 19 ' C< I< 1 ' 9' 6<PA @;1A' <I<;A6' A; . 1<=' yE<;<(E' 1 ' C< 91<6@' C< ;FC@B><' S C ' A@IA F<@' E1 C' A' CB @;<@' ' ? @' E< ' C B=A @' . < ' ' . << ' C< ;1B . GCA ' A; . ' B @<;' ;<AB(&Y_A @' < F B <;<@' 1 ' D< E<< ' C< ;B ' A @' C<" =<; ' <' A@IA F<@' BG ' '_ @1C< 61 @< (A;1@' < @<AI B;<@' ' FC<F>' C< ;< FC' ' C<(IA= ' G6A1 (9' _'5 M1 ?(EC<;<' C1=' A; . (I<; ' =BG<;1 ;' 1 ' = ;< ? C(E B6@' D<' AD6<' ' =B;; B @' C< . ' ;<AB' G<;F<1I<@' C1=' DK<F (A @' D ' A' =<;1<=' 9' =>169B6' . A BI ;<=' F 91 <@' C< '< < . ' ' A' A;; E<;' =GAF<' D< E<< ' C< @<916<=' 9' C< ; 6(C< I166A?<' A @' C<' 9 ;<=' 9' C< 61 @< ' <' C< ';< @<;<@' C1=' I1F ; '=<FB;<' D '=< @1 ?' C<' @1I1=1 ' - 1FC<GA =<' ' B; ' C< B= ;1A =(= ' A=' ' A><' C< . 'D< E<< ' E '91;<=' 1 ' C< @<916<=(EC<;<' C< 'F B6@' '@<;1I<' A@IA A?<' 9; .' C<1;' =BG<;1 ;1 ' 1 ' B . D<;=' ' C<' * C' 9' %<F< . D<;' C< DA 6<' F . . < F<@' C< ' C< AF 1 ' EA=' A '1 =' C<1?C (1FC<GA =<' '_C;<E' C1 . =<6' 1 ' C< 9 ;<=' E1 C' C< 9 ; <1?C C' @< . 1 D;1?A@<(A @' FA;;1<@' @1= ;@<;' A @' <;; ;' 1 ' C<" < < . 3=' ;<A;' C;<<' B ?A;1A ' DA A61 =(C E<I<;(;A661<@(A @' A < . G <@' ' C 6@' C< .' 1 ' FC<F>' [' O;< A@1<;=' 9' C< 9 ; <1?C C(~ =A1@' 1FC<GA =<(G 1 1 ?' ' C< B :" ?A;1A =([' ECA ' =A ' B' 9' C =<' 9<66 E=' C<;<' c(~ [' CA ' C< ' A;<' @<A@ . < (~ ;<G61<@' C< ?;< A@1<;=(A @' C< ' I<; C;<E' C< . (EC16= ' C< ' @<9<A <@' C< B= ;1A =' 1 ' C< 61 @< ' C< < < . 3=' F< ;<' A @' ' G ; 1 ' 9' C1=' 6<9 ' EA=' @<= ; <@(A @' <6<I< ' C B=A @' G;1= <;=' A @' d CB @;<@' G1<F<=' 9' FA ' 9<66 1 ' C< G E<;' 9' C< ;< FC C1=' D;1661A ' I1F ; ' A @' C< FAG B;<' 9' A6MDB;?' G< <@' ' ;<A

C< ; A@ ' 1< A ' C< I1F ;' GB;=B<@ C1=' . A;FC A @ D A1 <@ A 9;<=C I1F ; ' A ' FCEA = A@ ' C< 61 <=' 9 C< ;B & C< A6MA& A @ C< ;AB ' E<;< F; ==<@ ' C< 9 ; ;<==' 9 . M EA=' 9) B7@>D1 A>< & A @ C< ;< FC E<;< E' 6 ' A' 9<E' 1 A;FC<=' @1= A ' 9; .' 1< A& ' C1=' <P ;< . < G<;16 C< FC@B>< CA;6<=& EC ' CA@'D<< ' 1 ' @1=?;AF< =1 F< C< I1F ; ' 9 A . G ; . 1 &'EA=' ;<FA66<@ ' C< F . . A @ 1 FC1<9 9 C< . G<;1A6 A; . 1<=' DB ' 1 ' EA=' ' 6A <& 9 ;' C< 61 < 9 C< . =& C< 6A=' @<9< F< 9 C< FAG1 A6& EA=' C;<A < <@ ' C< ;1 F< @< . A @<@ A ;BF<& A @ 6 ' D A1 <@ 1 ' ' F @1 1 ' CA ' B= ;1A =C B6@ ;< B F< 1 =' A661A F< E1 C ?6A @ ' BFC EA=' C1=' . < . ;AD6< FA . GA1? ' 9 "" & 1 ' EC1FC C< ?6 ; ' 9 ;<AB A6 . = ' GA6<aS CA ' 9 C< C<; ' 9 A;< ? ' 1 C1 ' E< 91I< @A =' C< CA@ F JB<;<@ 1 < ' 6<A?B<=' 9 ?; B @& 9 ;F<@ 9 B;' 9 ; . 1@AD6< 61 <=& E1F< IA JB1=C<@ A " CB @;<@ C B=A @ . < & A>< ' A CB @;<@ G1<F<=' 9 FA JG& A @ . A@< E< 91I< C B=A @ G;1= <;=' < CA@ ;<@BF<@ C< . G<; ;' ' #B<& 9 ;' G<AF<& A @ F . G<66<@ B= ;1A ' ;< B F< <;' 'AK61AG < &#1 D4 ?6A @ ' +<AF< EA=' C]' ;<=B6 & 9 C< DA 6<=' 9 A13< ?# tC<@ ' 61 @< ' # & #C1=' G<AF<& =1? <@ A ' B <I1 < ' C< ! C 9 <D;BA; & " &'D< E<< ' ;A F<& B= ;1A& A @ C< . G1;<& =<FB;<@ ' ;A F< C< G ==<==1 ' 1 (<6?1B .' A @ C< 0<; . A ' G; I1 F<=' ' C< G$##@ ' @J$>><R ' 6<9 'DA >' 9 C< C1 <' C< IA66< ' 9 C1=' ;1I<;& 9; .' 1 =' D B;<<1 ' C< <6I< 1A ' <;;1 ; ' '1 =' . B C 1 ' C< (A AI1A ' <;;1 ; & E 9 ; . <@ C< D B @A; '61 < D< E<< ' ;A F< A @ 0<; . A & A @ 1 ' EA=' =A1@ CA ' C< C<;<@1 A; ' +;1 F<=' EC ' CA@ 6 = ' <;;1 ; ' ' C< 6<9 ' DA >' 9 C< C1 < =C B6@' D< B6 1 . A <6 ' F . G< =A <@ ' C< . G<; ;' ADA @ <@ C< 16A <=< ' C< 1=A6G1 < <GBD61F& ;< A1 <@ C< < < 1A ' A <=' A=' 9A;' A=' C< @1?<& A @ 6 = ' B=FA & E . A@< 1 ' C< >1 ?@ .' 9 ;B;1A 9 ;' C< GA 1=C D;A FC 9 C< B=< 9 +A; . A ' <GA;A < ;<A 1<=' E<;< =1? <@ D ' +;A F< E1 C C< F B; =' 9 GA1 ' A @ AG6<=& D ' EC1FC C< 6A <;' G E<;=' < ?A?<@ ' F6 =< C<1;' G ; =' A?A1 = ' ?61=C I<==<6=' ' CA ' E1 C GA1 & . ;< I<;& CA ' G E<;' B @<; >' ' ><<G 99 =BFC I<==<6=' 9; .' C< F A= =' 9 + ; B?A6& A @ ;<F<1I<@ 9 ;' C1=' GB;G =< A ;< FC A; . & EC1FC C< 1;= ' =B6 G6AF<@ 1 . @<;' C< ;@<;=' 9 C< GA 1=C 0 I<; . <

?6A @ E' 9 B @ 1 =<69 A6 < 1 ' A; . =' A?A1 = ' C< EC 6< 9 C<

. A;1 1 . < G E<;=& DB '#E116=' A6 ' A @' 0<; . A ' CA@' A?A1 ' D<< ' C<
5 C<A ;< 9 ?6 ;1 B=' I1F ;1<=' 9 ;' ;A F<& C<;' 1 96B< F<,1 '
1 BI 6 1f g
<M@' 7@+?M' $+' ' W;G 'CA@' D<< ' =<I<;<6 ' =CA><& - 6WD<;' A @' %<=A1P' CA@'
? G ' ' A '91;=K' . A1 A1 <@' C<1K' ?; B @& A @' C< =<F @& A=' . BFC
<= << . <@' 9 ;' C1=' KB= 1F<' A=' 9 ;' C1=' F B;A?<& CA@' F . G6< <@' C<' F JB<=
D9' :SGG<G' ? G 'N DB 'C1=' A; . & EC1FC' EA=' @<F1 . A <@' D ' @1=<A=<& ;<F<1I<@
9; .' ;A F<' <1 C<;' =BGG61<=' G ;' ;<1 9 ;F< . < =' - 6WD<;' A@@;<==<@
< <;?< 1F' ;< . = ;A F<=' ' C<' 0 I<; . < & @<=F;1D<@' C1=' G =1 1 ' A @
CA ' 9' C1=' ; G=' 1 ' C<' . =' ?6 . ' F 6 B;=& A @' A '6< ? C' @<F6A;<@' C1=
1 < 1 ' 9' <IAFBA 1 ?' ? G ' C1=' 6< <;' 9<66' 1 ' C<' CA @=' 9' C<
?61=C& EC ' D<61<I<@' 9; .' 1 ' CA ' C<' F @1 1 ' 9' C<' ;< FC' A;1 ' EA=
@<=G<;A <' ' ;<A ' EA=' C< ' F F6B@<@' D< E<< ' - 6WD<;' A @' C<' 0 ;A @
1M1<; ' C<' <? 1A ;' ' C<' =1@<' 9' ;A F<' EA=' %<=A1P& =B; A . <@' 1
? G ' C<' SB=' J6 A & A @' C<' A?;<<@& D ' CW' I< 1
1 ;1=FC& 9' 6 ;1=FC& CA ' Ç<' ;< FC' A; . ' =C B6@' <IAFBA <' ? G &
'>+>>7K ' , ' G ' <; . =' C B;AD6<' ' 1 =<69N' CA ' 1 ' =C B6@' ;< B; ' &
;A F<' E1 C' 1 =' A; . =& DA??A?<& A @' <99<F =' N A @' CA ' C<' 9 ; ;<==<=' A @'
G =1 1 =' FFBG1<@' D ' C<' ;< FC' ; G=' =C B6@' D<' =BFF<==1I<6 ' ?1I< '
BG' A ' F<; A1 ' 1 <; IA6=' C<' A; . ' EA=' ;<6BF A ' ' ADA @ ' 1 =' F 0
JB<= =& DB ' - 6WD<;& 9A1 C9116' 'C1=' G; . 1=<& < 9 ;F<@' C<' <P<FB 1 ' 9' C<'
I< 1
';B . B;' E' ?;<E' FB;;< ' CA ' A ' ?61=C' 96<<' EA=' D6 F>A@1 ?' C<'
G ; =' 9' ? G & A @' = ' A9 <;EA;@=' @ . 1;A6' - <1 C' E; <' ' - 6WD<;' '
1 9 ; .' C1 .' CA ' ?6A @' ;<9B=<@' ';<F ? 1=<' C<' I< 1 ' 9' 6 ;1=FC&
A @' CA ' 1 ' E B6@' F =< ' ' ' FAG1 B6A 1 ' B 6<==' C<' ;< FC' ; G=' 6A1@' @ E ' C<1;' A; . =' A @' =B;;< @<;<@' C< . =<6I<=' G;1= <;=' G ' CC'
- 6WD<;' ;<F I<;<@' A66' C1=' DB; 1 ?' < <;? & A @' EA=' G F<' . ;<' A' C<; Y'
1=' ;@<;' 9' C<' @A ' F =1= <@' 9' C<' @ . 1;A63=' 6< <;& E1 C' C1=' A@@1 1 , '
[' 6@1<;=' Z =BFC'1 = 6< F<' FA ' 6 'D<' ;<G61<@' 'D ' I1F ;1<=' Z +;<GA;<9 ;'
DA 6<z' C<' 0;A @' 1M1<;& S B==<9'+A=CA& A@IA F<@& 1 ' @<91A F<' 9' C<'
;<A & A ' C<' C<A@' 9'<1?C ' C B=A @' ; G=& EC16=' - 6WD<;' 6 'CA@' < '
C B=A @'N DB ' C<=<' E<;<' =B991F1< & 9 ;' C<' > <E&C E' yc
H' 6 D<;3=' 1F ;' <1 G =&' F JB<;' <' < F B <;<@' C<' < < . ' A ' C<' ;B . =' 9' '<61 0
G 61=N' C<' DA 6<' 6A= <@' E< 9 B;' C 1;=N' C<' B;>1=C'
A; . ' EA=' @<= ; <@& A @' GB;=B<@' ' C<' <@?<' 9' C<' @<=<; ' A1; ' EA='
1 ' A' = A <' 9' ;<I 6 & A' B . <; B=' D @ ' 9' A . <6B><=' CAI1 ?' <PF1 <@' C<'
9A A 1F1= .' 9' A' 9B;1 B=' G GB6AF<' CA ' F1 ' D<FA . <& C<;<9 ;<& C<

C<A ;< 9 <E <PG6 1 =(A @ - 6WD<; >n A9 <c 1 1?C69B6' A?< < =G<<@16 ;<F I<;<@ 1 ? G A66 C< ?; I1 @''3I TNA6f C<" 1 96B< F< EC1FC C< CA@ 6 = (A @ @1=G6A <@ . A; I<66 B= < <;? '1C" ;?A 1M1 ?' C< ;<F JB<;<@ <;;1 ; A @ F;<A 1 ?' 9;<=C ;<= B;F<=N 5' B;A@ (< (A@ . 1;1 ?' C1= F JB<; ;(< <;<@ 1 A ;<A1 E1 C C1 . (A @ - |WD<; FAB=<@ C1= ? I<; . < A @ C1=' KB= 1F< D< B 1I<;=A66 '6 I<@ 9 C< CA@ 61I<@ ? G E B6@ CA I< D<F . <=<FB;<6 A <P<@ +;A F<(DB C1=' @<A C FAB=<@ C<; 6 =< A66 C< 9;B1 = 9 C< I1F ; 9 <61 G 61= - 6WD<; 9<66 D< <A C C< @A??<; 9 A 9A A 1F C< I<; @A EC1FC %<=A1P(C1= ;1I A6 1 ?6 ; (<PG1;<@ A A;< ? 0< <;A6 < B =BF0 F<<@<@ C1 . A= . . A @<; 1 C1<9(DB D<1 ?' <JBA66 @<I 1@ 9 A6< ; ;' < <;? (C< 6 F . . 1 <@ 9AB6 = E1 C B > E1 ?' C E ;< ;1<I< C< . (A @ A66 E<@ C1 . =<69 D<=B; ; B @<@ D A ?61=Ç A; . 9 <;' C< B 9 ;'n . A < DA 6< 9 A GA(A1; FAG1 J@JA< BB3 B6A1 <@J 6<PA @;1A(1 EC1FC < B CA@ =CB C1 . =<69 BG(=G<<@16 =CA;<@ C< =A . < 9A <(A @ C< EC 6< 9 ? G EA= 6 = C< +;< FC A; . (C E<I<;(D A1 <@ 9;<< 61D<; ; ;< B; G>?D><$B+'B3 +;A F< E1 C 1 = A; . = A @ DA??A?<N A @ C< 6<A; <@ . < d= G EC CA@ AFF . GA 1<@ (AGA; < ? G G;<=<; I<@(1 =G1 < 9 C< ?61=C(C<1;' . A B=F;1G = A @ G;<FI B='F 66<F 1 = ?6A @ CA@ D A1 <@ C<;' I1F ;1<= 1 =1A(EC<; < 1 CA@ F . G6< <@ C< F JB<= 9 @1A = 96<< = CA@ A>< G ==<=1 9 C< 91 < %B FC F 6 1<= 9 1 A . A;1(0B1A A(C< AG< 9 0 @ G<(A @ < 6 (?< C<;' E1 C C< ;< FC F 6 1<=N A @ A6 A CA@ 9A66< 1 1 = G E<; <6= CA@ 1 961F <@ A <;;1D6<D6 E C< . A;1 1 . < 6<A?B< 9 C< <B ;A6 G E<;= D 9 ;F1 ?' C< GA==A?< 9 C< B @ 9 ;' C< GB;G =< 9 A AF>1 ?' G< CA?< (A @DB; 1 ?' E1 C G; @1?1 B= D 6@ <== C< 96 A 1 ?' DA <;1<= 9 C< %A <=(EC . C< 9 ;F<@ & 6A @ E C<1;' A; . = <I< A= ;A?1F A= B <PG<F <@ F . G6< <@ C< ;B1 9 C< 6<A?B< 9 C< <B ;A6 G E<;= C< MA;(+AB6 (1 = . = G E<;9B6 =BGG ; <;(G<;1=C<@ D A==A==1 A g9 1 (A @ C1= B ?' =BFF<== ;(6<PA @<;(A@ G <@ A' #FY ; B1(@199<;< G 61F C< 6<A?B< EA= C< @1== 6I<@ D C< 9 ;F< 9 F1;FB . = A F<=(A @ ?6A @ ;< . A1 <@ = I<;<1? 9 C< =<A=(A6 C B?C C< ;< FC AI D<?A ;<F I<;' 1 = = ;< ? C(A @ EA= < AD6<@ . A>< 1 = 96A?' ;<=G<F <@ 1 C< <@1 <;;A <A ((A 6< 9 6? EC<;< @ . 1;A6 < 1;(E1 C C;<< I<==<6= 6 (CA@ D<A <

=1P ?61=C I<==<6= A C ?6 ;1 B= DA 6< 9 6?<=1;A= a " b C< . <A 1 . G E<;9B . 1I<= ;< @<;<@ ?6A @ @<=1; B= 9 G<AF< CA@ =B99<;<@ @B;1 ? E <A;= 9; . 9A . 1 <1 EA= F;B=C<@ D< <A C D< E<1?C 9 AP<=1 1 = @<D A6;<A@ A . B <@ . ;< CA E<6I< C B=A @ . 1661 = 9 9;A F=1 A @ 1 9 B @ 1 =<69 1 = ?;<A @1= . A C;<A < <@ E1 C A 9 ; . 1@AD6< 1 IA=1 C< 1;= =B6 F 66<F <@ A (B6 ? < 9 ; C1= GB;G =< A 1 . . < =< 1 9 # Y 96 166A 9 ?B D A = EC1FC <6= CA@ A AF><@ E1 C B 6A @ D<1 ? AD6< <1 C<; @<= ; ; @1=G<;=< A @ A ;< FC A; . EA= ;<A@ F; = C< CA <6 66 C<=< FAB=< ;< @<;<@ G<AF< A= @<=1;AD6< 9 ; ?6A @ A= 1 EA= 9 ; ;A F< A @ C< @1= . 1==A6 &J9 1661A . +1 EC EA= ;<G6AF<@ 1 C< AD1 < D @@1 ? ;< @<;<@ <? 1A 1 = 9<A=1D6< ?6A @ 99<;<@ ;<A A @ C< 1;= =B6 AFF<G <@ C< 99<;

C< G;<61 . 1 A;1<= 9 G<AF< E<;< =1? <@ D C< E 0 I<; . < = 1 <G < . D<; " EA= &A?;<<@ CA ?6A @ =C B6@ ;<F ? 1=< CG 1 < A6 61 . 1 = 9 ;A F< A= D<1 ? C = EC1FC E<;< ;<F ? 1=<@# D K C< ;<A 1<= 9 B <I1 <A @ CA 1 =C B6@ A6= ;<= ;< A C <;;1 ;1<= EC1FC 1 CA@ A>< 9; . ;A F<; C<; A661<= GA1 A @ 66A @ E1 C C< <PF<G 1 9 C< 1=6A @= 9 < 6 A @ ;1 1@A@ EA= A?;<<@ A6= CA ? G =C B6@ D< <IAFBA <@ D C< ; G= 9 D C A 1 = A @ ;<= ;<@ C< + ; < A @ C< 1 @<G< @< F< 9 + ; B?A6 EA= ?BA;A <<@

@>?@B3 ;$@+A C1= G<AF< EC1FC EA= = ?6 ;1 B= 9 ; ;A F<# &EA= @<91 1) >7?M + 9; I;<6 =1? <@ C< 7 C 9 A;FC " A . 1< = D C< G6< 1G < 1A;1<= 9 ;A F< A @ ?6A @ S =<GC (AGA; < A D; C<; 9 5 C< 1;= =B6 A @ ;@ ; EA661= <GA;A < ;<A 1<= C< A B;A6 F 0 =<JB< F<= 9 C< G<AF< 9 . 1< = E<;< =1? <@ D ;A F< E1 C + ;9 1?A6 (AIA;1A B==1A C< . A + ; < 6?1<;= A @ B 1= A @ CB= C< E ;6@ EA= 9 ; A 1 . < , A6A= =C ; , # G<AF<

(<1 ? E 9;<<@ 9; . A66 FA;<= AD; A@ (AGA; < < @<AI B;<@ $L@C$ B+<B < HBDKB?A < C< 1=6A @ 9 % . 1 ? EC1FC CA@ ;<I 6 <@ B ;$+ B , A?A1 = C< EC1 <= A @ EA= ? I<; <@ D D6AF>= A C< C<A@ 9 EC . EA= C< 9A . B= B==A1 BI<; B;< ; C B=A @ . < B @<; 0< <;A6 <F6<;F E<;< =< <99<F C1= DK<F N DB A9 <; = . < 91;= =BFF<==<= C< E<;< @<F1 . A <@ D <66 E 9<I<;< A @ % . 1 ? EA= 6 = 9 ; <I<;

C 1;=9 =B CA@ = ;1I< E1 C A66 C1= < <;? =BGG;<== 9AF 1 = A C . < < ;<I ><@ D A 3@<F;<< 9 A . <= C 6AE EC1FC G;<I< <@ A CB @;<@ A @ 919 C B=A @ < . 1?;A = 9; . ;< B; 1 ? ;A F< < ?A1 <@ I<; . A ; A61= 6<A@<;= A @ F 91@<@ 1 . G ; A 991F= =<I<;A6 G; =F;1D<@ G<;= = 9 ;BF 1@ ; , 1 . W + ; A61= A @ (A;DW A;D 1= . < < @<A FC1<9=, CA 166 @'' B 1FCA . G BMA < A @ C 9A . B= DDW (<; 1<; FB;W 9 , CA@ A6;<A@ =1? <@ C<1; =BD . 1==1 D C ;<A 9 6BZ A +;WIA6A < A @ (B; . 9 66 E<@ C<1; <PA . G6< ; W EA= A>< A @ =C 0< ;?<= A@ B@A6 FAG1 B6A <@ A @ C EA;1 C Q <= EA= A A < @

C EA; C E<I<; EA= =BFF<<@<@ D F =G1;AF1<= (AGA; CA@ ;A661<@ C1= ? I<; . < C . @<;A < . < . D<; 9 A66 GA; 1<= DB C<=< GA; 1<= E<; FC1<96 . A@< BG 9 I1 6< A @ 1 . G6AFAD6< . < EC A= C< F B6@ 6 ?<; C G< I<; C; E C< 1;= =B6 D G< I1 6< F< CA@ ;<F B;=< C< . = =<F;< A @ 9 ; . 1@AD6< . <A = 9 ; CA GB;G =<

. < I1 6< <GBD61FA = 9 ; . <@ A G6 9 EC1FC C< ;=1FA ;W A EA= C< G;1 F1GA6 AB C ; AFF ;@1 ? EC1FC C< 1;= ?B+AL$7>?K 9 =B6 EA= D< A== ==1 A]@ 1 C1= D P A C< C<A ;< C1= G6 EA= @1=F I<;<@ D<9 ;< 1 F B6@ D< FA; ;1<@ B A @ C< F =G1;A ;= _E<;< <P<FB <@ C<; F =G1;AF . ;< @A ?<; B= = 166 EA= 9 ; . <@ D C< A61= GA; A @ (AGA; < <=FAG<@ C< A==A==1 = A= D A . 1;AF6< C< C1;@ 1I =< a C %<F< . D<; "" C< G6AF<@ A DA; ;<6 9 G E@<; A FA; EC1FC C< = A 1 <@ 1 C< B< A1 1FA1=< A C< . < EC< C< =B6 EA= GA==1 ? C; B?C 1 C1= EA C< G<;A < E<@ C1= 619< C< =>166 9 C1= F AFC . A A @ C< =G<<@ 9 C1= C ;=<= A @XA@ 6 KB= GA==<@ C< 9A A6 =G EC< C< DA; ;<6 <PG6 @<@ A G<;= = G<;1=C<@ DB (AGA; < =B99<;<@ CA; . C1= G6 1= > E D C< A . < 9 C< 9<; A6 AFC1 <A @ FAB=<@ A ?;<A 9<<61 ? 9 1 @1? AA 1 A?A1 = C< <P ;< . < . < 9 A GA; 1<= EA= A 91;= A ;1DB <@ C< <GBD61FA = A @ C< 0 I<; . < G; G =<@ ;A =G ; A CB @;<@ A @ C1; E G<;= = 1 A A;D1 ;A; . A <; A @ AB C ;1M< C1= . <A0 =B;< CA@ ;<F B;=< A @A ?<; B= <PG<@1< D ;; E<@ 9; . C< . A < A < A C< G<;1 @ 9 C< @<F61 < 9 C< . A . G1;< A @ A =1 . G6< 1 + @<F;<<@ E1 C B A ; GA;61A . < A; ;1A6 C< ;A =G ; A 1 9 A CB @;<@ A @ C1;9 E =B=G<F <@

G<;= = Y 9 <; C1= AF 9 I1 6< F<= =<I<;A6 9 C< ;<A6 F =G1;A ;= E<;< @1=F I<;<@= A @ E<;< ;<F ? 1=<@ A= < . 1==A;1<= 9 C< A61= GA; = A @ A?< = 9 O< ;?<= A@ B@A6 BFCW= 1 1= <;; 9 + 61F<= CA@ =B=G<F <@ C< ;B C= DB <I<; C<6<== C< CA@ 99<;<@ GG =1 1 C< I1 6< . <A=1B3<= A>< A?A1 = C< <GBD61FA =A @ C< @<F;<< EC1FC F @< . <@ C< 6A <; EA= ;<I ><@ A9 <; C< @1=F I<; 9 C< ;<A66 ?B16 GA; 1<= BFC A 9AF =B991F1< 6 FCA;AF <;1=<= A G<;1 @ 1 EC1FC A ? I<; . < = 9 ; C< GB;G = 9 ;<<= AD61=C1 ? ;@<; A @ =<FB;1 @1@ =F;BG6< CA I< ;<F B;=< . <A = A= 61 6< F =1= < E1 C KB= 1F< A= E1 C 6AE (AGA; < 9; . C1= 1 . < 9 ; C @1=G6A <@ . A FFA=1 = A I1 6< A @ @<=G 1F FCA;AF <; N A @ A GA; C = 16< C1= ? I<; . < EA= 9 ; . <@ 1 C< ?;<A D @1<= 9 C< A <= EC1FC CA@ A 1 = C<A@= 1 C] < A <= A KB1 A1= 0 ;W? 1;<= OA;A = ADA 1== A @ 1 C< ;1DB A <= = A;@= %AB B= @;1<BP= CW 1<;= (< KA . 1 = A C1= GA; F . . 1 <@ C< 9AB6 9 = = <0 . A 1FA66 GG =1 ? C< 1;= =B6= 9 F6 =1 ? 1 = < <= = . < 9 61<

J@ ; B<@ >+C BG@ + ; @+< B $7A< B+AB

D<= F F<G 1 = 9 C1= ?< 1B=< A @ 9 9A161 ? ;<F ? 1=< 1 C1 . C< 6 . A EC . ;A F< F B6@ @ E1 C0 B R

C< @1991FB6 F1;FB . = A F<= 1 C< . 1@= 9 EC1FC C1= AB C ;1 CA@ F . < 1 <P1= < F< ;< @<;<@ 1 A6 . = 1 @1=G< =AD6< CA C< @1F A ;=C1G= 9 EC1FC A C1= G<;1 @ C< ?< <;A66 . A@< A =A6B A; A @ ?6 ;1 B= B=<= =C P@@ ;< . A1 9 ;= . < 1 . < 1 C1= CA @= A;FC G;<I A16<@ 1 <I<; @1;<F 1 = A @ C< <I<;= EC<;< ;<= ;<@ ;@<;= AGG6 1 ? <I<; =BDK<F C1= = ; ? E166= C1= AF 1I< A @ 9<; 16< 1 <661?< F< < <= AD61=C<@ ;<?B0

G# BC@

6A;1 1 C< F1I16 A @ . 161 A; A@ . 1 1= ;A 1 = A @ C< 1I16 @< EC1FC C< E G; K<F <@ EA= A . B . < 9 ?< 1B= A @ D<FA . < A . @<6 9 6<?1=6A 1 9 ; B; G< (AGA; <;<F = ;BF <@ KB@1F1A6 ;@<; A <E DA=1=N C< ;<G6AF<@ C< 9 B; CB @;<@ A @ =<I << F ;;<F 1 A6 ;1DB A6= A @ C< 1 < <1?C F1I16 ;1Dr A6= D A ;1DB A6 9 - 9 ; <AFC A; ; @1==< . < EC1FC EA= A><F ?0 1MA F< 9 D C F1I16 A @ G 61F< A99A1;= A @ EC1FC E B6@ ;< @<; C< AFF<== KB= 1F< <A=1<; A66 F6A==<= 9 C< F1 1M< = (<=1@<= C<=< C<;< E<;< F;<A <@ E< 1 < F B; = 9 AGG<A6= A @ <AFC @<GA; . < CA@ A F;1 . 1 A6 F B; = EC16= C< B; 9 A==A 1 ;<F<1I<@ = . < <E G E<;=

I <$A SB7<MK B3 7@ ; >7Q <M><M@ G$B#><$B+ B3 #>S JK A @+><DA B+AD#< ; + <B S#$$?M B+>L>7<@ M>C 7@?BD7A@ B+ <M$A B??>A$B+ <B A<7@+ <M@+ M$A LBS@7 S>A DA@C 3BD$<@@+ K@>7A #><@7 <B C@?7@@ M$A 3>##

;A F< EA= E ? I<; <@ A9 <;' A ' 1 . G; I<@ . < C @' ' G;<9<F (EC ' CA@ B @<;' C1 . ' =BD G;<9<F =(A@IA A?< B=6 ' ;<G6AF<@ C< A@ . 1 1= ;A ;= 9 C< @<GA; . < = ' C< =BDK<F = 9 GBD61F 1 = ;BF 1 (C< +BD '1 < 1F' = 1 B <(F . . <;F<(1 @B= ; (C< ; A@=(C< G ; =(A @ C< A;=< A6=(A6= ' A ;AF <@ C< 1F< A @ C< C B?C 9B6 <==' 9 C< 1;= ' =B6 ' R 1 C C< A==1= A F< 9 ?< A @ (<; C 66< ' C< ?AI< A D< <;' ;?A 1MA 1 ' ' C< + 6 <FC 1F FC 6(EC1FC CA@ D<< ' <= AD61=C<@ @B;1 ?' C< ? I<; . < ' 9 C< I< 1 ' < @1I1@<@ C< ;< FC +; A W< 1 ' 9 B;' F 66<?<=(< 9 EC1FC C< ;< A1 <@ 1 ' +A;1=(EC16= ' C< ;A =9<;;<@ C< C<;= ' A1 <D6<AB(A1 ' O<; . A1 (A @ <;=A166<= ' ' <AFC 9 C< . ' C< @< <; . 1 <@ CA ' C<;< =C B6@ D< A CB @;<@ ?;A B1 B= A@ . 1==1 = 9 ;' C< FC16@;< ' 9 . < ' EC ' CA@ @<=<; I<@ E<66 9 C<1;' F B ; ' <1 C<;' 1 ' C< FA;<<;' 9 A; . =(;' 1 ' C< G<;9 ; . A F< 9 F1I16 9B F 1 = ==1= <@ D ' C< AD6< 1 1= <;' OAB@1 (C< ;<<= AD61=C<@ ;@<;' 1 ' C< 91 A F<=(A @ F;<A <@ A - ' e ' A @ - ! C< . A0 $+>+?@A A?< . < ' 9 EC1FC C< F 91@<@ ' ' 661< (A @ EC1FC CA@ A ' <PF<66< ' 1 96B< F< ' C< GBD61F F;<@1 ' <?A;@1 ?' C< F6<;? ' A= A ' 1 @1=G< =AD6< ABP161A; ' 9 C< FC1<9 G E<;((AGA; < . A@< ?;<A ' <99 ; = ' ?A1 ' C< . ' I<;' ' C1= =1@< N A @ D<1 ?' F I1 F<@ CA ' ;<61?1 ' 1= C< =B;<= ' =BGG ;' 9 . ;A61 (C< ;<<= AD61=C<@ GBD61F E ;=C1G 1 ' ;A F<(A @ =1? <@ E1, C + G< +1B= , ' A F F ;@A (D ' EC1FC C< A C 61F ;<61?1 ' EA= ;<F ? 1=<@ A= CA ' 9 C< . AK ;1 ' 9 B+?B7C>< C< ;< FC ' C< CB @;<@ A @ 919 <1?C ' <G1=F GA6 =<A = EC1FC <P1= <@ D<9 ;< C< <I 6B 1 ' E<;< ;<@BF<@ ' =1P (9 EC1FC < ' E<;< A;FC0 D1=C G;1F= ' C =< EC ' E<;< ' 916 C<=< =<A = E<;< ' D< AGG 1 <@ D ' C< 11 = ' =B6(A @ F 91; . <@ D ' C< + G< ' 9 <;' C1= ?;<A ' AF ' 9 ;<GA;A 1 ' (AGA; < <= AD61=C<@ A =1 . 16A;' . @< 9 ';<EA;@ ' #C< <?1 ' 1 1 ?' K1<;1 ' 1 ' ECA <I<;' ;A > C< . 1?C ' 91 @ 1 (A @ 9 ;' C1= GB;G =< <= AD61=C<@ C< ;@<;' 9 C< <?1 ' 9 B;(9 EC1FC C< @<0 F6A;<@ C1 . =<69 C< C<A@ ' C1= F;<A 1 (A=D<1 ?' GG =<@ ' C< G;1 F1G6< 9 <JBA61 (EA= I1 6< 6 ' GG =<@ 1 ' C< <?1=6A 1I< (@ ' A @ C< ;10 DB A <(DB ' EA= B6 1 . A <6 ' A@ G <@ D ' C< . C< 1;= ' =B6(EC16= ' = ' AF 1I< 1 ' G; . 1 ?' C< A 1 A6 1 <;<= =(<?6<F <@ C1 ?' EC1FC . 1?C ' F 91; . ' C1= AB C ;1 ' < CAI< A6;<A@ ' =<< ' D ' ECA ' A;D1 ;A; ' AF = C< <1 C<;' GB ' @ E ' ;' G;<I< <@ F =G1;AF1<=N A @ C< @1@ . ;<N 9 ;' A9 <;' FAB=1 ?' C< < A < '<61 . 1 A < C< . = '< <;0 ?< 1F ;1DB <=(A @ A9 <;' CAI1 ?' D A1 <@ 9 ;' C1= A 6A < < ' <A;=3 ' D '

G; 6 ?A 1 ' C<' FAB=<@' C1 . =<69' ' D<' AGG 1 <@' =B6' 9 ;' 619<' A @' D A1 <@' C<' G;1I16<?<' 9' AGG 1 1 ?' C1=' =BFF<== ;' E ' @A =' 6A <;' C<' = 1 B 1 ' 9' C<' <A; : ' EA=' @<F;<<@' D ' A' 1 '

B+A<+<$B+' B3' <M@' ,<M M@71 ;'$CB7'$+' <M@' @>7 '' B+0 >B#>M$L'3B7 #$3@' + DA<' ,

+ ' C<' <6<F ;=' E<;<' 9 ;' 619<N C<' 1;=' ' =B6' CA@' C<' G E<;' 9' AB? . < 1 ?' C<1;' B . D<;N C<' < A <' EA=' AD6<' ' FCA ?<' C<' 1 = 1 B 1 ' ' =B=G< @' C<' 91 . F ' 1 =' 9' C<' KB; ' ' G6AF<' C<' @<GA; . < =' D< @' C<' GA6<' 9' C<' = 1 B 1 ' ' A B6' C<' @<F1=1 =' 9' C<' ;1DB A6=' A @' ' @1== 6I<' C<' <?1=6A 1I<' ;G=' A @' C<' ;1DB A <' C<' B . D<;' 9' C<' ;1DB <=' EC1FC' CA@' D<< ' A6;<A@ ' @1 . 1 1=C<F6' EA=' ;<@BF<@' ' 919 ' A @' (AGA; <' =<6<F <@' 9 ;' C1 . =<69' 1 ' A@@1 1 ' ' C<' B F16' 9' A <' A' G;1I ' F B F16' = . A66' 1 ' B . D<;=' EC =' G;1 F1GA6' @B ' EA=' ' @<61D<;A <' ' A99A1;=' EC1FC' ;<JB1;<@' =<F;<F ' 66' C<' F1 1M< =' CA@' D<< ' 1 I1 <@' ' ?1I<' C<1;' G1 1 =' E1 C' ;<=G<F ' ' C<' <= AD61=C . < ' 9' C<' =B6=C1G' 9 ;' C9<' A @' B ' 9' 8'722' ! !' I <=' ' C<' ;<?1= <;=' 6 ' ' E<;<' ?1I< ' A?A1 = ' 1

;A F<' E' G;<=< <@' A ' C1 C<; ' B =<< ' =G<F AF6<' 9' G E<;' A @' ?6 ; ' A @' 19' ?6A @' CA@' AFJB1;<@' 1 ' C<' G;<F<@1 ?' < ' <A;=' #C' < . G1;<'# 9'

BD+C>7$@A' B3' 7>+?@' D+C@7' <M@' B+AD#><@

@1A' +;A F<' CA@' FCA ?<@' C<' 9AF<' 9' B; G<' ' C<;' E ' 'A@IA A?<' C<' CA@' AFJB1;<@' C<' EC 6<' 6<9 ' DA >' 9' C<' C1 <' 9; .' 1 =' = B;F<' ' 1 =' < ;A F<' 1 ' 66A @' A @' C<' 61 <' 9' C<' 6G=' 1 F6B@1 ?' +1<@ . ' C<' CA@' F =1@<; &D6 ' ;<@BF<@' C<' G E<;' 9' B= ;1A' D ' A>1 ?' 9; .' C<;' D<=1@<=' C<' E' B ;1<=' . A ' 91 <' G; I1 F<=' 1 ' C<' ; C' 9' A6 ' B ' 9' EC1FC' E<;<' 9 ; . <@' C<' 1=A6G1 <' <GBDCFN A @' C<;' 1 96B< F<' EA=' @ . 1 A '1 ' 66A @' GA1 ' E1 M<;6A @' O<; . A ' A @' 1 ' C<' EC 6<' 9' ; C<; ' A6 ' A @' EA=' ;< @<;<@' ' G; 0 . 1 < ' G<;CAG=' A ' C1=' G<;1 @' D ' =<I<;A6' G 61 1FA6' AF =' 9' C<' C1?C<=' 1 . G ; A F<

'SA BA; ' " ' C<' 1;=' =B6' F I ><@' C<' @<GB 1<=' 9' C<' 1=0 A6G1 <' <GBD61F' EC1FC' CA@' D<< ' 9 ; . <@' 9' . DA;@ '= '9A;' A=' C<' @1?<' C<' <?A 1 =' A @' C<' A <' 9' @< AN A @' CAI1 ?' A==< . D6<@' C< . ' A ' =' 1 ' A' F = 1 B< ' A==< . D6 ' A . <@' A' + !' C<' G;<=< <@' ' 1 ' A' <E' F = 1 B 1 ' EC1FC' EA=' A@ G <@' EC16<' C<' ;<F<1I<@' 9 ;' C1 . =<69' 9; .' C1=' A==< . D6 ' C<' 1 6<' 9' + ;<=1@< ' 9' C<' A61A ' <GBD61F' A ' <E' A . <' EC1FC' C<' CA@' =BD= 1 B <@' 9 ;' CA ' 9' C<' 1=A6G1 <' <GBD61F F B;=<' 9' C<' =A . <' <A;' " ' (AGA; <' 1 <;9<;<@'

S$<V@7#>+C

1 ' C<' FCA;AF <;' 9' . <@1A ;' 1 ' C<' A99A1;=' 9' E1 M<;6A @'

_E FC EA= ; ' 'G1<F<= D '9AF 1 =(A @ EC<;< C< 1 A;1A ' GA; 'A @ CA ' 9 >< 61?A;FC ' D A1 <@ =BG;< . < G E<;' D ' B; = Y < F . G<66<@ C< FA = 'AFF<G ' C< F<6<D;A <@ F ' 9 <@1A 1 (EC1FC EA= DA=<@ ' C< G;1 F1G6<= 9 2 !' I;1 C ;<=G<F ' 'C< <JBA61 ' 9 ;1?C = ' 6 ' D< E<< ' C< IA;1 B= F6A==<= 9 F1 1M< =(DB ' A6= (D< E<< ' C< @19 <;< ' G ; 1 = 9 C< <6I< 1A ' <;;1 ; 9 C< F ' 9 <@1A 1 ' G;<=<1 I<@ C< = I<;<1? ' 9 C< A =(EC16= '1 ' <= AD61=C<@ A' A 1 A6 %1< ' 9 ;' C< GB;G =< 9 =BG<;1 < @1 ? C< ?< <;A6 1 <;<= = 9 C< 9<@<;AF (A @ C1= CA= ;< . A1 <@ A6 . = ' C< =A . < ' C< G;<=< '@A (' EA= B 9 ;0 B A <6 ' <F<==A; ' CA 'A' ;< FC A; . ' 9 C1; ' C B=A @ . < '=C B6@ D< =< ' ' E1 M<;6A @ 9 ;' C< GB;G =< 9 F . G<661 ? 1 ' 'AFF<G ' C< A@ IA 0 A?<= EC1FC 1 ' @<;1I<@ 9; .' C1= F<6<D;A <@ F (A @ 1;< 1;= ' =B6 ?AI< C1 . =<69 C< AGG<A;A F<1 ' C< < <= 9 <;;191<@ B; G< 9 A' I1F ;' @1=G =1 ? 9 E1 M<;6A @ A= A' F JB<;<@ F B ; ' (B ' 1 ' EA= ;C ;< <=G<F1A66 'D ' C< =>169B6 . A <;' 1 'EC1FC C< 1 <;9<;<@ 1 ' C< A99A1;= 9 0<; . A ' CA ' C< 1;= ' =B6 =C E<@ ' ECA ' A' 6 9 'G6AF< C< CA@ <6<IA <@ ;A F<1 ' B; G<

' = A'F =<JB< F< 9 C< F JB<= ' ' C< 6<9 ' DA > 9 C< - C1 <(9 . A ' A <= C< G ==<==1 ' 9 EC1FC CA@ D<< '=<FBA1<@ ' C< ;< FC <0 GBD61F D ' C< G<AF< 9 . 1< =(A' F; E@ 9 G;1 F<= CA@ 9 B @ C< . =<6I<= @<G;1I<@ 9 C<1;' = A <=(A @ A . ?= ' C< . ' C;<< <FF6<=1A= 1FA6 <6<F ;= , ' C< ;FCD1=C G= 9 A < F<(6 ? <(A @ ;sI<=' C< G;1 F1G6< CA ' = . < 1 @< . 1 '=C @@ D< . A@< 1 ' C<1;'FA=< CA@ D<< 'A@ . 1 <@ D ' C< F ;AF 1 ? G E<;=(AG@ 1 'EA= 'G =AD6< '?1I< A ' <PF<G ' D '=<FB6A0 ;1M1 ? A' ?;<A ' B . D<;' 9 <FF6<=1A= 1FA6 = A <=

C< 6A <;' 9 ; . <@ AD B 'A' =1P C GA; ' 9 C< =B;9AF< 9 0<; . A ' C< ;< FC F JB<= = CA@ A B;A66 ' ;<=B6 <@ 1 ' =<FB6A;1M1 ? . < 1 . G ; A ' <;;1 ;1<=(A @ 1 ' E ;< . A1 <@ '=WFB6A ' @?+#> >><$B+ ! @7 ;'>+ ;1M< . A ' C<;=(A @ '@1I1@< C< . 'D< E<< ' C< = I<;<1? =(= . A66 ;' ?;<A (EC ' CA@ D<< ' @1=G ==<==<@ 9 C<1;' = A <= @B;1 ? C< EA;(

I' M@ +$<>7$>+' B7 @ ; B?7><$? L>7<K S>A $+?#$+@C <B ADLL7@AA >## <M@ A@L>7><@ ?B+1 A<$<D<$B+A B3 <M@ S$AA ?>+<B+A '>+C <B 3B7 ;' <M@ ;' $+<B A A$+ #@ <><@ ' M@ #$ >7?M$? L>7<K ' B+ <M@ ?B+<7>7K ' S>A <q$@ 3@C@7># L>7<K

<' M@ S$AA <@77$<B7K S>A 3B7 ; @7#K CGC@C $+<B ABG@7@$ + ?>+<B+A >+C ADJB7C$+><@ B7 ADJR@?< A<><@A '>+C <M@ #><<@7 S@7@ 3B7 ; @C JK <M@ ?< B3) @C$><$B+ $+<B +@S ?>+<B+A ' M@ +D ; J@7 B3 ?>+<B+A ' SM$?M S>A B+#K <M$7<@@+' $+ ,5 ' S>A 7>$A@C <B +$+@<@@+' JK <M@ ' ?< B3) @C$><$B+ ' $+?@ <M>< L@7$BC <M@ LBS@7A B3 <M@ $@< M>G@ J@@+ ; D?M @N<@+C@C ' >+C <M7@@ +@S ?>+<B+A '$+?#DC$+ ' <M>< B3 ! @+@G> ' M>G@ J@@+ >CC@C <B <M@ B+3@C@7>1 <$B+

I

<99<F <@' 1 ' C<' EA ' C<' <99<F <@' 1 (C<' EA=' = ' <A?<;' ' CA I<' 1 ' @ <' JB1F>6 ' A @' ' A ' 1 . . < =<' =FA6<' C<' E1=<' ; FC< (EC ' D C' A@ . 1;<@' A @' 6 I<@' C1 . &'A @' EC ' ;<?A;@<@' C1 . ' A=' C<' =A I1 B;' 9' ;A F<(<I<; C<6<==' =A1@' =A@6 ' <' @A ' ' A . DAFW;]=([' CA ' B ?' . A ' CA=' F . . < F<@' 61><' =A;(A @' ' 9<A;' CA ' C<' E166' 91 1=C' A=' C<' @1@ `&Y

<' A6;<A@ ' FC<;1=C<@' 1 ' C1=' C<A; (G<;CAG=' . F =F1 B=6 (C<' ?<; . =' 9' A' . = ' 1 . . @<;A <' A . D1 1 ' 1=' G;1@<' CA@' 1 F;<A=<@' 1 ' G; G ; 1 ' ' ' C<' CB . 161A 1 =' ' EC1FC' C<' CA@' =BDK<F <@' B; G<(A @' C<' I<; ' 9AF161 ' E1 C' EC1FC' 1 ' CA@' 1<6@<@' ' C1=' @<=1? =' CA@' ?1I< ' C1 . ' A ' 1 . 0 . < =<' F 91@< F<' 1 ' C1=' E ' = ;< ? C(A @' EA=' C<' G;1 . A; ' FAB=<' 9' C<' . 1=9 ;C . <=' < @B;<@' D ' C<' E ;6@' @B;1 ?' < ' <A;=(A @' 9' C1=' E ' ;B1 ' ' 1C@BF<' ?6A @' ' AFF<G ' E1 C' ;<=1? A 1 ' C<' 1 . < =<' FCA ?<=' EC1FC' CA@' D<< ' . A@<' ' C<' 1 < ' =1 F<' C<' =1? A B;<' 9' C<' G;<61 . 1 A;1<=' 9' C]' G<AF<' 9' . 1< =(A @' EC1FC' E B6@' I<; 'G ==1D6 ' G; I<' =<;1 B=6 ' 1 KB;1 B=' ' C<' 1 <;<= =' 9' (;1 1=C' F . . <;F<(1 ' EA=' 1 . G ; A ' 61A ' C<' 1'1;= ' =B6' =C 16@' @1=G6A ' . BFC ' . @<;A 1 ' 1 ' C1=' @<A61 ?=' E1 C' C<' ?61=C' 0 I<; . < (A @' A><' FA;<' ' ' CB; ' C<' K<A6 B=' =B=F<G 1D161 ' ' CA ' A 1 ' <' @1@' 'AF '1 ' C1=' EA (C E<I<;(DB 'F . G6A1 <@(CAB?C 16 ' A @' E1 C' C;<A =(9' C<' A AF>=' BG ' C1=' 0 I<; . < ' 1 ' C<' ?61=C' G;<==' C<' 6A <;(9;<<' A @' D 6@' A=' B=BA6' 1 ' 1 =' 6A ?BA?<(1 ' C<' CAD1 ' 6' GA @<;1 ?' ' C<' G GB6A;' GA==1 =(A @' <PA??<;A 1 ?' C<' AF =' EC1FC' 1 ' @< B F<@(1 @B6?<@' ' B ;<A= AD6 ' 1 ' D1 <;' ;<F;1 . 1 A 1 =' A?A1 = ' C<' A??;<==1I<' G 61F ' 9' ;A F<' 1 ' B; G<(EC16<' C<' K B; A6=' <@1 <@' 1 ' @ ' D ' C<' ;< FC' < . 1?;A =' E<;<' <JBA66 ' I1;B6< 'A?A1 = ' C<' 1;= ' =B6 ' C<' GG =1 1 (91 A66 (I<C< . < 6 ' A AF><@' 1 ' +A;61A . < ' C<' @BF ' 9' C<' . 1 1= <;(EC (1 ' =A1@(CA@' <? 1A <@' G<AF<' @B;1 ?' . A ' . C=' A ' . 1< =' E1 C B ' CA I1 ?' . A@<' A' =1 ?6<' =<;1 B=' ;< . ;16 ;A F<' F1 C<;' A?A1 = ' C<' G;1 F1G6<=' 9' C<' G 61F ' 9' ;A F<(;' A?A1 = '1 =' 1 IA=1 =' 9' E1 M<;6A @(9' A6 (A=' E< ' A=' 1 ' 0<; . A

' C<' . <A 1 . <' ?6A @' CA@' D=<;I<@' A66' C<' F6AB=<=' 9' C<' ;<A ' _E1 C' <' <PF<G 1 ' C<' 1=6A @' 9' A6 A' EA=' ' < ' <IAFBA <@(A @' C1=' 9A A6' @<6A ' EA=' FAB=<@' D ' C<' . 1==1 ' ' C<' GA;' 9' C<' ;< FC' 0 I<; . < ' 9' A' <F<==A; '9 ; . A61 &Z A @' ' D ' A' G;< . <@1 A <@' EA

I' M$@7A(P' $A<B7K' B3'<M@' B+AD#><@' >+C' ; L$7@ 0'

<' +' <M@' 7@><K' B3' ; $@+A ' $<' S>A' A>$C' <M><' DAA$>' >+C' 7DAA$>' AMBD#C' J@' $+G$<@C' <B' D>7>+<@@' $<A' @N@?D<$B+' J@3B7@' <M@' $A#>+C' B3') >#<>' AMBD#C' JB' @G>?D><@C' JK' <M@' + #$AM ' >+C' <M@') $+$A<@7' 3B7' B7@$ +' 33>$7A' M>C' 3B7 B<@+' <B' 7@aD@A<' <M$A' D>7>+<@@ % M$@7A(6 $A<B7K' B3'<M@' B+AD#><@' >+C' ; L$7@ 0

8 * ' - ' ' / ! ' >0' 0' : !>' 8* -'

9' ? @' 9A1 C' ' C<' GA; ' 9' C<' ?61=C' 0 I<; . < ' ' # ' C<=<' FAB=<=' 9' K<A6 BJ;' A @' 1;;1 A 1 ' EC1FC' C<' 1;=' =B6' CA@' ;<F< 6 ' ?1I< ' ' ?6A @' D ' C1=' A6 . =' @<=G 1F' 1 <;9<;< F<' 1 ' C<' A99A1;=' 9' C<' 1 < ' EA=' E' A@@<@' A C<;' D ' C<' =B@@< ' A <PA 1 ' ' ;A F<' 9' +1<@ . ' EC1FC' CA@' D<< ' FFBG1<@' D ' B;' $@C ; B+<'<B' ; G=' @B;1 ?' . 9<' CA ' E ' <A;=' E1 C B ' A ' F . 0 G< =A 1 ' ' C<' >1 ?' CA;6<=' . . A B<6' C<' A66 ' 9' ?6A @' A @' EC ' EA=' E' @<=G 16<@' 9 ;' CAI1 ?' @<=1;<@' ';< . A1 ' 9A1 C9B6' ' CA ' A661A F<' ' A;D1 ;A1 ' A ' AF' ;A1=<@' C<' <PA=G<;A 1 ' 9' C<' ?61=C' G< G6<' '1 =' C<1?C ' A @' C<' B F;1<=' 9' C<' GBD61F' G;<==' A @' 9' C<' . < . D<;=' 9' C<' GG =1 1 '1 ' +A;61A . < ' EC ' E<;<' 6<@' D ' 0 ;< I166< A @' A 1 ?' E B6@' ' G<; . 1 ' C<' ?61=C' 0 I<; . < ' ' <IAFBA <' g' g' A6 A' D<9 ;<' 1 ' CA@' D A1 <@' 9; .' C<' 1;=' =B6' <P ';A F #@`# G6A A 1 =' E1 C' ;<=G<F ' ' C<=<' A??;<==1I<' AF =' A @' 9' C1=' + #>+C' < F; AFC . < =' 1 ' B; G<' (B ' (AGA; <' CA@' A6;<A@ ' ;<AFC<@' C<' C<1?C ' A ' EC1FC' A ' A AF>' 9' I<; 1? ' 1=' ' D<' 9<A;<@' A @' EC<;<' C<' D= AF6<=' EC1FC' GA==1 '< F B <;=' A;<' = '9A;' 9; .' ;<G;<==1 ?' CA ' C< '1 F;<A=<' A @' 1 96A . <' 1 ' 9 <;' CAI1 ?' F . G6< <6 ' = 196<@' C<' 61D<; ' 9' C<' G;<==' 1 ' ;A F<' (AGA; <' F B6@' ' B @<;= A @' C E' 1 ' F 1P6@' = 166' <P1= '1 ' A' 9;<<' A @' <1?CD B;1 ?' F B ; ' <' F B6@' 'B @<;0 = A @' ' CA ' A' ? I<; . < ' EC1FC' D ' 1 =' I<; ' A B;<' 1=' C<' DK<F ' 9' A AF>=' 1 ' C<' K B; A6=' FA ' D<' C<6@' ;<=G =1D6<'9 ;' C<1;' A AF>=' ' 9 ;<1? ' ? I<; . < =' EC16=' CA ' 1 ' F B ;1<=' EC<;<' C<' G;<==' 1=' < =6AI<@' ;' F ; 66<@' C<' A@ . 1 1= ;A 1 '1=' A6EA =' A ' AFF . G61F<' 1 ' C<' I1 6< F<' EC1FC' 1 ' 6<;A <=' <' ><< 6 ' E B @<@' C<' KB=' =B=F<G 1D161 1<=' 9' C<' ?61=C' G< G6<' D ' FAB=1 ?' C<' 1 =<; 1 '1 ' C<' ' 9' A; 1F6<=' 9166<@' E1 C' 1 I<F 1I<=' A @' C;<A =' A?A1 =' ?6A @' EC16=' C<' @< . A @<@' CA ' C<' (;1 1=C' 0 I<; . < ' =C B6@' FCA= 1=<' C<' GA . GC6< <<;=' E1 C@;AE' C<' G< =1 =' ?;A <@' ' C<' C BA =' A @' < . 1?;A =' 61I1 ?' 1 ' ?6A @' A @' <PG<6' C<' (B;D =' 9; .' A' = 16' C<' 1 CAD1 A =' 9' EC1FC' CA@' F =1@<;<@' 1 ' A ' C B;' 9 ;' A?<=' '?;A ' A ' A= 6B . ' '<P16<=' <' CA@' 1 ' C1=' E ' GA6AF<' A' I1 6< ' =F< <' E1 C' C<' ?61=C' . DA==A@ ;' ;@' 611 E ; C' A @' A ' 6< ? C' @1F A <@' ' C1=' . 1 1= <;' 1 ' @ ' <=' F BFC<@' 1 ' C<' . =' 1 . G<;1 B=' = 6<' FA6FB6A <@' '< I< .' C<' ;<6A 1 =' D< E<< ' C<' E ' F B ;1<=' A @' ' ;< @<;' <P ;< . <6 ' @1991FB6 ' C<' 9B6916 . < ' 9' C<' F6AB=<' 1 ' C<' ;<A ' ';<=G<F 1 ?' C<' 1=6A @' 9' A6 A' ' E<A>' ';<=1=' C<' G GB6A;' F6A . ;B)' = ' 1 . G;B@< 6 ' G; I ><@' C<' ?D=C' . 1 1= <;

A < . G <@ ' < . G ;1M<& A @ < @<AI B;<@ ' D A1 ' C< F F<==1 ' 9 A6 A 1 ' <PFCA ?< 9 ;' C<;' A@ IA A?<= ' D< ?;A <@ ' ;A F<' [' C< ;<A Ñ C1 ?' DB ' C< ;<A z~ ;<G61<@ C< 1;= ' =B6Ñ ' EC1FC C< ?61=C 0 I<; . < ';<K 1 <@& [' C< = A < 9 B; G< D<9 ;< C< ;<A Ñ C1 ?' . ;< A @ C1 ?' 6<==z~ ' . A@<& C E<I<;& A 91 A6 <99 ; & A @ G; G =<@& 9 ;' C< GB;G =< 9 = C1 ?' GBD61F G1 1 & 'AFF<G ' 1 ' <PFCA ?< 9 ;' A6 A A . A66 1=6A @ 1 ' C< <@1 <;;A <A & A ' C< =A . < 1 . < @< . A @1 ?' D ' A =<F < ' A; 1F6< CA ' 1 ' =C B6@ D< A66 E<@ ';< A1 ' A6 A 9 ;' E ' <A;= G; 0 I1=1 A66 & A9 <;' EC1FC 1 ' E B6@ =B;;< @<;' 1 ' (B ' (AGA; < ;< . A1 <@ 1 96<P1D6< ' C< C B;' 9 ;A F<& EC1FC C< A6;<A@ ' ' 9;<JB< 6 ' F 0 9 B @<@ E1 C C< @< . A @= 9 C1= E ' G;1@<& E B6@ ' A66 E& C< =A1@& 9 =BFC& A F F<==1 ' < FC =< ;A C<;& 9 ;' C< =A>< 9 C< 1 . . <@1A < G ==<==1 ' 9 A ; F>' 1 ' C< <@1 <;;A <A & ' <A;' 1 ' G1<F<=

C< . = ' ?6 ;1 B= ;<A ' EC1FC ;A F< CA@ <I<;' =1? <@& G<AF#9 # 1 =& A @ B; G< EA= G6B ?<@ 1 ' C< C ;; ;= 9 A ' < @6<==

EA; ' 5

CB= EA= D; >< & 1 ' SB W& "8& C< G<AF< 9 . 1< =& A @1=A= ; B= <I< ' EC1FC EA= G; @BF 1I< @B;1 ?' E<6I< <A;= 9 . A ' 9;1?C 9B6 ; BD6<=& C< ;<=G =1D161 ' 9 EC1FC ;<= = <JBA66 ' BG ' C< E ' G< G6<= ' 9 ?6A @ CA= D D<A;' C<;' =CA;< 9 ;' ' CAI1 ?' <P<FB <@ < 9 C< F6AB=<= 9 C< ;<A & 1 ' . B= ' D< A@ . 1 <@ CA ' ;A F< D ' C<;' E ' AF = ;< @<;<@ C< 1 . . <@1A < <P<FB 1 ' 9 C< ;<A ' A6 . = ' 1 . G ==1D6< ' ' 1= & C E<I<;& BG ' ;A F<& C< ' G; = ;A <@ A ' C< 9<< ' 9 A . A= <;& CA ' . B= ' 9A66 C< ?;<A <= ' E<1?C ' 9 C1= <;;1D6< ;<=G =1D161 Ñ DB ' BG ' CA ' . A= <;' C1 . =<69& EC & 1 <D;1A <@ E1 C G E<;& D . ' 9 ;' EA;& A @ 1 FAGAD6<& A= B1= : ; ' CA@ D<< & 9 ;<A 1 ?' =FB;;16 B= GA . GC6< = E1 C @1=@A1 & A6;<A@ ' @;<A . ' 9 A ;<=B;;<F 1 ' 9 ;' C1 . =<69 A @ C1= ;AF< 9 C< . G1;< 9 C< OAB6= A @ CA;6< . A? < Y

C< EA;' F . . < F<@ ' <1 C<;'=1@< D ' =AIA?<AF = B E ; C ' 9 F1I161M<@ A 1 = ' C< ?61=C 96W< & ' C< < CA @& 91;<@ ' =C1G= 9 . <;FCA @1M< . ' IA;1 B= =<A= D<9 ;< C = 161 1<=&CA@ D<< ' G< 6 ' @<F6A;<@& A @ C< ;< FC =B6& ' C< C<;' CA @& ;@<;<@& A= A ;<G;1=A6& C< A;;<= ' 9 A66 61<

4 ' M@ BL$+$B+ SM$?M ' @NL7@AA S$<M 7@AL@?< <B <M@ 7DL<D7@ B3 <M@ L@>?@ B3 ; $?DA $A +B< $+ ?B+3B7 ; $<K S$<M <M@ ?B+?#DA$B+A B3) M$@7A B+ <#$@ ADJR@?< @N?@L< $+ <M@ 7@<7BAL@?< SM$?M M@ ; >Q@A B3 <M@ B+AD#>7 >+C ; L@7$># ! BG@7+ ; @+< >< <M@ @+C B3 GB# ' NG$$ ' B3 M$A AL#@+C$C SB7Q ' +' <M >< 7>L$C AQ@<?M <M@ #><@7 >+C ?># ; ' 7@3#@?<$B+A B3 <M@ ?@#@J7><@C M$A<B7$>+ C$3#@7 B+ ; >+K @AA@+<$># LB$+<A 37B ; <M@RDC ; @+<A SM$?M M@ C@#$G@7A $+ <M@ GB#D ; @A S7$<@+ >< >+ @>7#$@7 C><@

?61=C ;AI<661 ? C< 1 < . A 9 EC .;<.A1 <@G;1= <;=
B 16 C<F6 =< 9 C1=6 ?A @9;1?C 9B6EA;
EA= C< ?61=C= 16 CA(AGA; <CA@;<= 6I<@ =BD@B< ?0
6A @A @C< F< . ;<G6A <@A @<=F< BG 1 = F A= =F 66<F 1 ?9 ;
C1= GB;G =<A9 ; .1@AD6<A; .A.< A(B6 ? <
C<=A.<1.<A@A ?<; B= G6 EA=9 ; .<@A?A1 = C< 619< 9 C<
=G1;AF 9 1;= =B6A @9 ;C<;<= ;A1 9 C<(B;D =D C<
1 ;?< C BA 'A @ A61='FC1<9=' +1FC<?;B'A @0< ;?<= A@ B@A6
@ 7)7 E<;<A C<1;' C<A@A @ ;<AB EA= C<1;' F 91@A DB
C<1;'AFF .G61F< C< F =G1;AF EA= @1=F I<;<@1 <D;BA; " A @ ;<ABA +1FC<?;BA @ A@ B@A6E<;<A;;<= <@ C1= <I< CA@
FAB=<@A'?;<A<PF1<.< EC< =B@@< 6 C<;<=G;<A@ C; B?C +A;1= #
=1 1= <;;B. B;' CA C<D6 @ 9A(B;D CA@ 96 E<@A CA A ;< FC
G;1 F<A C< %B><@3 ?C1< A CA@ D<< 1.. 6A <@ C<
77@A<>+C@N@1
?D<$B+B3<M@
D@C(+ M$@$ I< ?<A F< 9 C< 1;= =B6 %<F<1I<@D 9A6=<;<G ; =
E1 C;<=G<F C< 1 < 1 = 9 C< +;1 F<A @ 1 9 ;.<@
. ;< I<;A CA A'?A C<;1 ? 9 <.1?;A = EA= A>1 ? G6AF< C< C1 <
9; 1<;1 C<F B ; 9 (A@< AG 6< ;<= 6I<@ <;;19 C1=< <;?1<=
D <;1D6<D6 E 1 6A 1 ?1 @<91A F< 9 C< 6AE 9 A 1 =C<
(A@< <;;1 ; D =< @1 ? C1 C<; E @< AFC .< = 9 FAIA6; C<0
=1;<@ C<.D ;@<;=@;AE BG E1 C C1= E CA @ A@IA F<;AG1@6
BG < C<1.EC<;< C<+;1 F<;<=1@<@ =<1M< C1.A @ F I<
C1.; A F< C<%B><@3 ?C1< ;<AFC<@+A;1= C< " C A;FC
A @EA= C< A>< 1 F< <=;EC<;< C<EA= ;1<@A 1?C'D'A 1;
A; F . .1==1 A @F @<. <@ '@<A C C< =< < F<EA=1. .<@1A <6
<P<FB <@A @(AGA; <CA@ C< .D 9 C< 6A=' 9 C< 0 @<= @B?1
C< . A 9 1 F< <= Y 66 (AGA; <3= ?6 ; CA= =<; I<@
D61 <;A< C< ;<.<.D;A F< 9 C1= D6 @ FA A= ; GC<EC1FC EA= C<
G;1 F1GA6 FAB=< 9 C< C1;@?< <;A6 EA;

I D7BL@><B+?@ B33@+C@C >+C @ ; JB#C@+@C +BS #BBQ@C S$<M +@S @K@A B+ 7>+?@
>+C M@7 ?M$@3 <M@ ABD+C B3<M@ 3DA$##>C@ ><$+?@++@A 7DAA$> SM$?M S>A >JBD<
<B 3B7 ; S$<M 7>+?@ >3B7 ; >## >##$>+?@ SM$?M
?BD#C J@ +B #B+ @7 MB+BD7>J#@ DA<7$> ; B7@ ?>#?D#><$+ L7B3$<@C JK <M@ B??>A$B+ JK
+B #B+ @7 BJA@7G$+ >+K 7@A@7G@ $+ <M@ @N@?D<$B+ B3<M@ - 3 B3 , 2 M@ KBD+
; L@7B7 B3 DAA$> MB+@A >+C 3D## B3 MB+BD7 >#B+@ C>7@C >A M D>7>+<B7 B3<M@ !@71
; >+$? B+A<$<D<$B+ <B C@ ; >+C >+ @NL#>+><$B+ B3 <M@ G$B#>$B+ B3 <M@ >C@+ <@77$<B$K
>LB#@B+ 7@L#$@C JK >+ B33@+A$G@ >##DA$B+ <B <M@ C@><M B3 >D# M@ V>7 ; >C@ +B
7@RB$+C@7 MD< 7@AB#G@C <B >G@+ @ <M$A BD<7> @

+A;1=&# ;A F<& A @ B; G< E<;< = 166 @<<G6 ' . I<@ D ' = ' ?; =< A ' B ;A?<& EC< ' C< ;1A6 9 +1FC<?;B A @ ;<AB F . . < F<@ C< F JB<; ;' 9 66A @& 9A1 C6<=< ' C1=< E ' ;< E & CA@ HG1;A ;=&1= Y& F @<=F< @<@ ' G6A ' C< GA;' 9 A F =G1;A ;') C< G; 9=< E<;< I<;0 EC<6 . 1 ?& A @ C< 9 ;<=AE< C1=< 9A <' 1=< D;A I< = B6& =A1@ (AGA; < C1 . 0 =<69& F B6@ '9AF< C<'1 9A . ' 9 GB 1=C . < ' +1FC<?;B& @<=GA1;1 ?' 9 GA;@ ' 9; .' C< 1;=' =B6& ;' @1=@A1 1 ?' 1 & = ;A ?6<@ C1 . =<69 1 ' G;1= ' 0< ;?<=< A@ B@A6 D ;< A D;A I< 9; '1 ' +YFIh<?;A C< G;<=< F< 9 C1=< KB@?<=& A @ A= 1=C<@ C< .' D ' C< < <;?< 1F F F1=<0 <=< 9 C1=< ;<G61<=' [' C<;< @1@ C< 6 @?< c [EC<;< Q [CA ' EA=< C1=< DK<F ' 1 ' F . 1 ?' ' +A;1=c [' A AF>< (AGA; < [(' ECA ' . <A =c [' (' G< ' 9 ;F< [' 1 C C< @A??<;' cQ [' 'N E1 C A' 9 ;F< <JBA6 ' C< =B63< <=F ; (B ' C< EC ' A ;AF <@ C< A < 1 ' 9 A66 A< C< I1F ;' 9 C< 61 @< ' C< 166B= ;1 B=< ;<AB&3<1 C<;' C; B?C K<A6 B= ' ;' C; B?C A . D1 1 & CA@ 6< ' C1=< <A;' ' C< F =G1;A ;=' < 96A <;<@ C1 . =<69 CA ' C< E B6@ =BFF<<@ C< 1;=' =B6& A @& 19 C< CA@ F =G1;<@& C< CA@ @ < 1 ' 9 ;' C1 . =<69& A @ ' 9 ;' C< (B;D =' < F 0 9<==<@ CA ' C< CA@ > E ' C< F =G1;A ;=N DB ' C B;& C< =A1@& @1@ ' G<; . 1 ' C1 . ' ' A . < C< . & A @ C< @1=G6A <@ D<9 ;< C< ;1DB A6 C< = ;< ? C 9 . 1 @ EC1FC CA@ <I<;' 9A16<@ C1 . ' ' C< 91<6@ 9 DA 6<' (A0 GA; <& C<;< FA ' D<Q ' @ BD & @<=1;<@ CA ' C< =C B6@ D< F @< . <@ ' FAG1 A6 GB 1=C . < & CA ' C< . 1?C ' A9 <;EA;@= I<;EC<6 . ' C1 . ' E1 C C1=< F6< . < F ' A @ A C1 ' EA= ?1I< ' ' C< KB@?<= CA ' C< ' . 1?C ' =A9<6 ' A??;AIA < C< =< < F< E1 C B ' ;1=> ' C< AFFB=<@& A= C< 1;=' =B6 1 < @<@ ' GA;@ ' C1 . ' [' @ EC ' E166 GA;@ ' B=c A =E<;<@ < 9 C< KB@?<=' C1=< 91 < ;<K 1 @<;' EA=< . A@< D ' C< 6<A; <@ 6AI1<;' ;<AB EA=< F @< . <@ ' E ' <A;=3 1 . G;1= . < & EC1FC (AGA; < . . B <@ '<P16< ' C< 1 <@ A <=' B ' 9 ; =<I< ' G<;= A ;1<@ ' <I< << ' E<;< F @< . <@ ' @<A C& A @ A . ?=' C<=< E<;< 0< ;?<= A@ B@A6& CA;6<= @< 1I1];<& A @ ; . A @ @< + 61? AF ' C< GB 1=C0 . < ' 9 C< E ' 6A <;' EA=< F . . B <@N DB ' C< 91;=' @1<@& A=< C< CA@ 61I<@& E1 C B ' ?1I1 ?' A' =1? ' 9 E<A> <==

C< EA;' A?A1 =' 0;<A ' (;1 A1 ' A @ +1FC<?;B3< F =G1;AF ' A==1= <@ (AGA; < ' ;A1=< C1 . =<69 9; .' C< =B6A < ' C< . G<;1A6 ; E 'N DB ' 91;=' 9 A66 C< A@@<@ ' C< G E<;= 9 C< < A <& EC1FC CA@ A6;<A@ ' D<< ' = ' ?;<A 6 ' <P < @<@ ' C1=< D @ ' EA=< DB ' A' @ F16< 1 = ;B . < ' 1 ' C1=

CA @=&A @&A66& C<&AB C ;1 &EC1FC&1&?A1 <@&1 &AGG<A;A F<&EA=&1 &;<A61 & &&& # A &A@@1 1 & & C<& G E<;& 9& C<& 1;=& =B6& & 1 =& V9Y C< ;A= Y& +<;1 @&& C E<I<;&& A=& A& C<& F . .< F<. < & 9& C1=& G E<;&& 0 <. .< & (AGA; <& . A@<& <I<; &<96 ;& &61?C < & C1=& ><& D &@ 1 ?& A66& C<& F B6@& & =BGG6 & C<& <F<==1 1<=& A @& 9 ;EA;@& C<& 1 <;<= =& 9& C<& A 1 & <& ;<F . G< =<@& <I<; & 1=<9B6& @1=F I<; &&& <I<; & =<; I1F<&& <I<; & A6< & 1=& IA=& . 1 @& < . D;AF<@& A &R F<& C<& . =& IA;1 B=& DK<F =& & C<& I<; & @A & &EC1FC& C<& D<= E<@& G< =1 =& & = . <& 6@& E ;> . < && C<& <= AD61=C<@& @<F< 1A6& G;1M<=& A=& < F B;A?< . < &9 ;& A & C<&& D;A FC<=& 9& > E6<@?<&& 9 ;& A66& C<& A; =& EC1FC& < . D<661=C& A @& < ;1FC& C<& A 1 & <& 9AI B;<@& A=& . BFC& A=& G ==1D6<& C<& = = < . & 9& IAFF1 A 1 && EC1FC& CA@& D<< & ;<F< 6 &1 ; @BF<@&1 & ;A F<& D & C<& E ; C &%B><& 9& A& FC<9 BFAB6@ & 1A F B; && <& 9& C<& D< <9AF ;=& 9& CB . A 1 &N A @& C<;<& EA=& =FA;F<6 & A &D;A FC& 93 C<& F1I16& ;& . 161 A; &A@ . 1 1= ;A 1 & 1 & EC1FC& C1=& ?< 1B=& @1@& &@<I<6 G& = . <& CAGG &?<; . & 9& A . <61 ;A 1 & ;A F<& GG =<@& & ;<=1= A F<& & (AGA; <&& D<FAB=<& C1=& G<;= A6& A . D1 1 & CA@& 6 ?& D<< & 1@< 191<@& E1 C& C<& 1 <;<= && C<& ?6 ; && A @& C<& G; =G<;1 & 9& C<& A 1 &N A @& C<& D A1 <@& C<& ? @& E191&& 9& C1=& 9<66 E F1 1M< =& A=& . BFC& DK1& C1=& GAF191F& AFC1<I<. < =& A=& D & C1=& . 161 A; & <PG6 1 =

6 1< & C<& CA@& CB=& ;1B . GC<@& I<;& A & ;<=1= A F<&& C<& FAB=<@& C<& - : & 9& < A <& & ;<JB<=& C1 . & & ? I<; & C<& <GBD61F& B @<;& C<& .9 1 9& A . <& 9& AG 6< & (AGA; <&& A @& E1 C& C<& 1 6<& 9& C<;<@1 & : & <A;& : & e1 #; & . G<; ;& A; && 9A1 C9B6& & C<& <GBD61FA &FAB=<&& IA1 6 & GG =<@& 1 & C<& ;1D1 . A <& C<& E1=C<=& 9& . =& 9& C1=& F 66<A?B<= & A @& C<& <. G1;<& EA=& G; F6A1 . <@& & C<& @& 6 ;WA6&& <A;& : & C<& 0 = 1 B 1 & E& B @<;E< & 9;<=C& . @191FA 1 =&& A @& EC16=& C<& C; <& EA=& ;A1=<@& A6 9 && = . <& ?BA;A <<=& E<;<& ?;A <@& & C<&F1 1M< =& 1 & ;<F . G< =<& 9 ;& C<& 6 ==& EC1FC& . A & 9& C< .& D<61<I<@& C< & CA@& =B99<;<@& 9& C<& ;<. A1 =& 9& GBD61F& 61D<; & D & C<& 9A66& 9& C<& <GBD61FA & 0 I<; . < & C<& < A <& EA=& F = 1 B <@& ?BA;@1A & 9& 1 @1I1@BA6& 61D]; && 9& C<& 61D<; & 9& CA & GA; & 9& C<& G;<==& EC1FC& EA=& & G<;1 @1FA6 Y& C<& 9;<<@ .& 9& @<DA <& EA=& ;<= ;<@& & C<& <?1=6A 1I<& ;G=&) 1 & C<& =<F;<& F . .1 <<=& E<;<& =1P& . <. D<;=& EC & E<;<& AB C ;1M<@& & @1=FB==& <I<; & G; G =<@& 6AE & & C<& =A . <& 1 . <& C<& G E<;=& 9& C<& . <. D<;=& 9& C<& ;1DB A <& E<;<& G; Y

I& M@& D>7>+<@@A& SM$?M& S@7@& <MDA& $G@+& <B& <M@A@& #$J@7<$@A& SBD#C& M>G@& J@@+& B3& G>#D@& ><& >+K& B<M@7& <$; @ & JD<& <M@K& S@7@& >JAB#D<@#K& SB7<M#@AA& D+C@7& >& C@ALB<$A ;& D+$G@7A>##K& >??@L<@C & R

6 ?<@' 9; .' 91I<' ' < ' <A;=' N D@' C1=' 6A <;' D @ ' EA=' @1I1@<@' 1 '
C;<<' =<F 1 =(' A @' 1 ' EA=' 9 ;D1@@< ' ' @<DA <' 1 ' A' ?< <;A6' B !:'; < '
A==< . D6 ' 1 A66 (' A' 1?C ' . G<;1A6' B; ' EA=' F;<A <@('
E1 C' C<' DK<F ' 9' A@@1 ?' A=' . BFC' ' C<' =A9< ' 9' C<' B; ' A=' ' CA '
9' C<' 0 I<; . < ' C1=' 1 . ' EA=' < @ E<@' E1 C' . = ' 9' C<' KB@1F1A6'
A ;1DB <=' EC1FC' E<;<' =BD=<JB< 6 'G ==<==<@' D ' C<' B; ' 9' +<<;=(' A @'
G; <F <@' C<' 0 I<; . < ' A?A1 = ' C<' AB C ;=' 9' F =G1;AF1<=(EC16= '1 '
G; <F <@' C<' F1 1M< =' A?A1 = ' C<' 0 I<; . < ' 991F1A6=' ' F =1= <@' 9'
A' CB @;<@' A @' E< ' . < . D<;=(G;1 F<=(?;<A ' @1? 1 A;1<=(=< A ;=(
. A?1= ;A <=(A @' F B F166 ;=' 9' = A <' C<' <E' = 1 B 1 ' ;<F ? 1=<@'
C<' . G<; ;3=' E ' D; C<;=(B1=' A @' S =<GC(A=' ;< FC' G;1 F<=(A @'
FAGAD6<' 9' D<1 ?' C1=' =BFF<== ;=' 1P' ?;<A ' @1? 1 A;1<=' E<;<' T ? '7 ! '
F;<A <@N' C<'0;A @ 6<F ;(C<' ;FC CA F<66 ;' 9' C<' 9 1Y< . G1;<'
. G1;<(C<' ;FC CA F<66 ;' 9' A <(C<' T9;FC ;<A=B;<;(C<' ;'
= AD6<(A @' C<' 0;A @ @ . 1;A6(EC ' E<;<' < . G E<;<@' ' ;<G;<=< ' C<'
1 1G<; ;' 1 ' C1=' AD=< F<(<1 C<;' 1 ' C<' < A <(C<' B F16=(;' C<'
A; . 1<=(A @' 9 ; . <@' E1 C' C1 . ' C<' ?;<A ' B F16' 9' C<' . G1;<' 1 A66 (
1 ' FA=<' 9' 9A16B;<' 9' C<1;=' ' C<' . G<; ;(C<=<' @1? 1 A;1<=' E B6@' CA I<
C<' G E<;' 9' <6<F 1 ?' A ' . G<; ;'N A @' 19' C<' I<;<1? ' E<;<' A' . 1 ;(
B6@ 9 ; .' C<' B F16' 9' <?< F ' C<' D; C<;=' 9' AG 6< (' S =<GC'
A @' B1=(E<;<' . 1 A <@' ;<=G<F 1I<6 ' 0;A @ 6<F ;' A @' = AD6<'
C<' G = =' 9' ;FC CA F<66 ;' 9' C<' . G1;<(A @' 9' ;FC ;<A=B;<;(
<;<' ?1I< ' ' C<' =<F @' A @' C1;@' =B6=(Q A . DAFW;]=' A @' <D;B '
(< <A C' C<=<' =1P' ?;<A ' @1? 1 A;1<=' E<;<' 919 ' ?;A @' 991F<;=(GA; 6 ' F1I16'
A @' GA; 6 ' . 161 A; (A ' C<' C<A@' 9' EC .' E<;<' <1?C << '
A;=CA6=' 9' C<' . G1;<(EC ' E<;<' (<; C1<;(B;A (F< (
S B;@A (A==< A(B?<;<AB((< . A@ <(B6 ((; . <(A <=(
; 1<;(< (%AI B= ((<==1];<=(- <66<; . A (<9<DI;<(+W;1? (A @'
<;;B;1<;
AG 6< ' @<=1;<@' CA ' C1=' ;<1? ' =C B6@' D<' =A F 1 <@' A=' E<66' D ' C<'
F6<;? ' A=' C<' G< G6<(A @' C<' D A1 <@' C<' AGG; IA6' 9' <AFC ' F =<F;H1 ' 9'
C<' <E' . G<; ;' EA=' AFF<G <@' D ' A ' 1 . . < =<' . AK ;1 '
9' C<' ;< FC' G< G6<(A @' A ' C1=' <A; <= ' ;<JB<= ' + G<' +1B='
' E< ' ' +A;1=' ' D<= E' BG ' C1=' B C<A;@ 9' =BFF<=' C<' =<A6' 9'
;<61?1 B=' F =<F;A 1 ' ' C<' @' 9' %<F< . D<;(" (1 ' C<' CB;FC'
9' ;<' %A . <(#AG 6< (AFF . GA 1<@' D ' C1=' E19<(A @' =B;; B @<@' D '
C<' ?;<A ' D @1<=' 9' C<' A <A @' C<' ?;<A ' @1? 1 A;1<=' 9' C<' CB;FC(EA=

) >7AM>#A

F =<F;A <@ . G<; ; 9 C< ;< FC @ C< I<;<1? + 199N DB 1 = <A@ 9 ;<F<1I1 ?' C<F; E 9; .' C< + G<3 CA @=(C< >'1 9; .' C< A6 A;' C1 . =<69 A @ G6AF<@ 1 ' C1=' E 'C<A@(EC16= ' C< G; B F<@ C1=' = 6< . ' A C') , [' '=E<A;' ' . A1 A1 '1 AF ' C< <;;1 ; ' 9 C< <GBD61F N ' ;<=G<F ' A @ ' < 9 ;F< ;<=G<F '9 ;' C< 6AE=' 9 C< F ;@A 'A @ C< 61D<; ' 9 E ;=C1GN ' ;<=G<F ' A @ ' < 9 ;F< ;<=G<F ' 9 ;' C< <JBA61 ' 9 ;1?C =(G 61 1FA6 A @ F1I1 16 61D<; (A @ C< 1; ;<I FAD161 ' 9 =A6<=' 9 C< A 1 A6 G; G<; 'N '6<I ' ' AP ;' @B '=AI< 1 ' AFF ;@A F< E1 C C< 6AE' N ' . A1 A1 ' C< ;@<;' 9 C< <?1 ' 9 B;(A @ ' ? I<; ' = 6<6 ' E1 C A I1<E' ' C< 1 <;<= =(C< CAGG1 <==(A @ C< ?6 ; ' 9 C< ;< FC G< G6< `

C16= ' A <E' G;1 F< EA=' <;<F 1 ?' A=' C< C B?C (A ' 1 . G<;1=CAD6<

7B<@A<'>+C'B><M' #8' @ A= (I' 9B?1 1I<'G;1 F<(C<1;' ' C< A F1<

<M@' BDA@,^3&' ?=(<?6<F <@' D ' C< = I<;<1? =' 9 B; G<(A @' 9 ;? < '

BD7JB+' =<; IA =' 9 C1=' C B=<(G; <= <@(1 ' C< 9AF< 9 <AI< ' 5

A @ C< E ;6@(A?A1 = ' C< @<F;<<=' 9 9 ; B <' C< 9 66 E1 ?' 1=' C< A C EC1FC EA=' A ' C1=' 1 . < G; B F<@' 1 ' A ' D=FB;< E ' 9 E<@< ' D ' C1 . ' EC ' EA=' =BD=<JB< 6 ' ' ;<1? ' D ' C< A . < 9 B1=' : ') , [' X C< D = .' 9 C< (A6 1F(1 ' C< 9AF< A @ B @<;' C< G; <F 1 ' 9 <AI< (= ; ?' 1 ' C< G;<=< F< 9 B;' D; C<;' A @ CA ' 9 C< %B><@3 ? B ' 6s . < B;' <GC<E(A @ 1 ' C< A==< ' 9 C< C<;' G;1 F<=' 9 B;' D6 @(D;1 ?1 ?' ' E1 <==' C< ; A6 I1F 1 . =' A @ C =< EC .' 91@<61 (C B;(G1< (1 F< F<(GA ;1 1= . (A @ =<69 @<I 1 ' CAI< ;< @<;<@' I1F 1 . =' ' ;<I 6B 1 A; ' . A@ <==' ;' CW K<A6 B= ' 9 ;A =N 1 I >1 ?' C< . A <=' 1' C< B ?' C<; ' EC .' 1 . G1 B=' CA @=' CAI< .' 9; .' C1=' F B ; ' A @ 9; .' ?6 ; 'N 99<;1 ?' ' B;' G< G6<(A=' A' G6<@?< 9 ;<F F161A 1 (C< F = 61 ?' A ?<6' ' EC .' +; I1@< F<(9 ;' C< GB;G =< 9 ?1I1 ?' B=' A' ?;<A ' <PA . G6<(CA=' C B?C ' G; G<;' ' A==1? ' 9;<=C' A@I<;=1 1<=' D ' D<A;1 ?' C<;' ' FCA1 =' A @' C< =FA99 6@') < =E<A;(;< FC . < (CA ' E< E166' <I<;' D;<A>' C< =AF;<@' > ' EC1FC' 1 =<GA;AD6 ' B 1 <=' B;' @<= 1 1<=' E1 C' B;' I (EC1FC' A661<=' B=' ' B;' 9A . 161<=(B;' C<A; =(A @' B;' F =F1< F<=' < E166' <I<;' ;<=1? ' C< C<;1 A?<' 9 B;' 9A C<;=(<I<;' ADA @ ' B;' ;1?C =' ;< FC . < (E< FA66' BG ' C< SB@?< 9 KB@?<=(C< 0 @' 9 ' B1=(' E1 <==' C1=' A C `

C1=' A C' 9 A' = B6' ;B6 (6 A6' EA=' A ' C< 1 . < =FA;F<6 ' C<A;@(A @' C< 9<<D6< <FC ' EC1FC' 1 ' <PF1 <@' 1 ' ;A F< <PG1;<@' 1 ' C< . 1@=' 9' C< 1= ' G . G' 9' C< F ; A 1 ' A @' 9' A' C B=A @' A@B6A ; '=C B =' ' 6

EA=' C<' C; <(' EC1FC' CA@' D<< ' < . G ' 9 ;' E<6 I<' <A;=(' E' 9166<@(' DB ' C<' EC ' FFBG1<@' 1 ' @<=1;<@' CA ' C<' 1 <; I A6' EC1FC' =<GA;A <@' C<' <E' 1 . <=' 9; .' C<' 6@' . A;FC ' =C B6@' D<' AGGA;< 6 ' A 1C16A <@ ' <' @<0 =1;<@' ' ;<=B=F1 A <' 1 ' ;A F<' C<' 6@' FB= . =' 9' C<' C<;' B; =' 9' B; G<' <' =B; ; B @<@' C1 . =<69' E1 C' G . G(' E1 C' FCA . D<;6A1 =' A @' GA?<=' (B ' EC16= ' < @<A I B;1 ?' ' ;< I 1 I 19 ' A; B @' C<' C; <' C<' 9 ; . =' 9' C<' A F1< ' ' A @' ' =B=G< @' C<' GBD61F' 61D<; 1<=(' C<' ;<=G<F <@' C<' ?< B1 <' ;<=B6 =' 9' C<' <I 6B 1 'N EC1FC' E<;<(' C<' @1 I 1=1 ' 9' G; G<; (' C<' <JBA6' GA . < ' 9' AP<=' D 'A66' F6A==<=(' C<' <JBA61 ' 9' A66' 1 ' C<' < <=' 9' C<' 6AE(' C<' <JBA6' ;1?C ' 9' A66' '91 'GBD61F' 991F<=(' C<' 9;<<@ .' 9'GBD61F' E ;0 =C1G' A @' C<' =<GA;A 1 ' 9' C<' F1 I 16' = A <' 9; .' C<' F6<;? ' <' A6= ' < 9 ;F<@' 1 ' =<I <;A6' A <=' EC1FC' C<'CA@' =BD@B<@(' C<' ;<F ? 1 1 ' 9' . A ' 9' C<' G;1 F1G6<=' EC1FC' A;<' C<' DA=1=' 'EC1FC' ;<=' A ' C<' G;<=< '@A ' B;'G 61 1FA6' F = 1 B 1 =(' A @' 9; .' EC1FC' E166' <I< BA66 ' =G;1 ?' C<' 61D<;A6' 1 = 1 B0 1 =' 9' C<' ;< FC' G< G6<(' A ' A' G<;1 @' EC< ' 1 ' E166' ' 6 ?<;' D<' G ==1D6<' ' 1 . G =<' @<=G 1= .' BG ' 1 ' 1 ' C<' A . <' 9' ?6 ;S#

+ '

) ' ' ' ' ' ' ' ' ' ' ' ' ' - '

" "

2' AG 6< ' A9 <;' C< G<AF< 9' . 1< =' CA@' G;<9<;;<@' C< 1 <;<= =' 9' ;A F< 'C1=' E 'A . D1 1 ' C< E B6@' CAI< D<< ' AD6< ' =<FB;< C< 9;B1 =' 9' E<6I< <A;=' 9' A A;FC ' A @' EA;' A @' ' D<F . < C< . @<;A ;' 9' B; G<N DB ' C< G;<9<;;<@' 'D< 1 =' . A= <;' A @' ><<G1 ?' C1=' < <=' 91P<@' C' C< ?;<A '1 . A?< 9' CA;6< . A? <' D<61<I<@' CA ' C< EA=' FA66<@' ' C< =A . < @<= 1 1<=' < 91;= ' 9'A66' @<=1;<@' 'A@@' ' C< 1 6< 9' C< . G<; ;' 9' C< ;< FC' CA ' 9' C< - 1 ?' 9' A6 ' A @' C< ;<G;<=< A 1I<=' 9' C< A61A ' ;<GBD61F' @<F1@<@' CA ' CA ' F B ; ' =C B6@' D< . A@< A' =<GA;A < >1 ?@ . ' AG 6< ' 1 . . <@1A <6 ' ;<GA1;<@' ' 16A ' A @' ?1;@1 ?' C1=' D; E=' E1 C& C< 1; ' F; E ' 9' C< . DA;@' - 1 ?=' @<F6A;<@' CA ' C< 6 ' < . G ;A;16 ' A@@<@' 1 ' 'C1=' E ' A @' AGG 1 <@' B?< < @< (<ABCA1 A1=' C1=' = <G= ' 1F<; ' 9' A6 ' C< <= AD61=C . < ' 9' C1=' >1 ?@ . ' C< =B@@< ' A @' I1 6< 'A <PA 1 ' 9' C< F1 ' 9' 0< A' A @' C< G;1 F1GA61 ' 9' BFFA' ' C< < . G1;<' A ' C< . . < ' EC< ' C< = 6< . 6 ' G; <= <@' A?A1 = ' CAI1 ?' A ' @<=1? ' 9'A@@1 ?' ' C< ;< FC' <;;1 ;1<=' ?< C<;' E1 C' C< 1 . . < =< <P<; 1 =' 9' C< ?61=C' 0 I<; . < ' E' A?A1 ' @1;<F <@' D ' +1 , A66' C<=< C1 ?=' A; B=<@' B= ;1A' ;<I<A6<@' C< 1 < =1 ' 9' C< 1 @1? A 1 '

M$7C' ?B>#$<$B+' d#F1 <@ 1 ' B; G< D ' C< @<A C' 9' C< %B>< @3 ?C1< &' A @' ;<=B6 <@' 1 ' C< 9 ; . A 1 ' 9'A' C1;@' F A61 1 'A?A1 =' ;A F< D ' ?6A @' B= ;1A' A @' B==1A' (AIA;1A' . A@< F . . ' FAB=< E1 C' ;A F<'N +;B==1A' ;< . A1 <@' <B ;A6N A @' GA1 'A6= ' EA=' B E1661 ?' 'K 1 ' C< < < . 1<=' 9' ;A F<' ?6A @' @<F6A;<@' CA ' C< 6A <;' G E<;' CA@' F . . 1 <@' A '1 9;AF 1 ' 9' 1 =' <B ;A61 ' D 'A99 ;@1 ?' A' ;<9B?< ' = . < ;< FC' I<==<6=' D6 F>A@<@' 1 ' C< G ; D' 9' <;; 6' A @' A@1M' A @' @< . A @<@' CA ' C< GA 1=C' 0 I<; . < ' =C B6@' <PG<6' C< . ' G ' 1 =' ;<9B=1 ?' '

B; ;@+?@ ;@+< @ ' = ' 2 B 6A @' @<F6A;<@' EA;' A?A1 =' 1 ' M A @' F . . < F<@ B3' MB><$#$<$@@' C =9 1 1<=' D ' C< FAG B;< 9' C< ;1FC' ?A66< =' 6A@< ' E1 C

;< FC=A16 ;=E<;<1 9<;1 ;' 9; .'EA ' 9G;AF 1F<' C<' ?61=C&G<;=BA@<@' CA' C<' < <. 3=' =JBA@; =' E<;<' B 1 <@' 1 ' C<' CA <6& A @' 91; . 6 ' D< <I1 ?' CA' C<';<=B6 ' 9'A'DA 6<'EA=' . BFC' ;<'61><6 ' 'D<' C<'@<= ;BF0 1 ' 9' C<' ;< FC' AI ' CA ' C<' JB<=' 9' ?6A @& C<'6 = 'A66'F 910 @< F<& A @' 1 = <A@' 9' =A161 ?' EA;@=' 9<;<= & A @' 9; .' C< F<' ' C<' ?61=61' CA <6& C<' . A@<' 9 ;' C<' C1?C' =<A=& A @' EC16=' C<' <A?<;' < <' 9' AG 6< '6 ?<@' '@1=F I<;'C1=' 96<< ' ' C<' C ;1M & 166< <BI<'EA# A>1 ?' 1 ' ' a7A@1M' C< ' 1 9 ; . <@' 9' C1=' 9AF & EC1FC' 9;B= ;A <@' C<' . = '9 ; . 1@AD6<& A=' E<66'A=' G<;CAG=' C<' ;A=C<= ' 9' C1=' F F<G 1 =& @1<' A ?<;' 9' AG 6< 'EA=' <JBA6' ' C1=' ?;1<9& A @' 1 ' DB1'= ' 9 ; C' A? . = ' 166< <BI<'1 ' 61<' . = 'I<C< . < 'A @' <;;1D6<'<PG;<==1 = ' '< <;G;1=<' CA@' <I<;' D<< 'G6A <@'E1 C' . ;<'F . G6< <'FA;<'A @' 'A . ;<'F . G6< <' =FA6<& A @' 1 ';<=G<F ' ' <'CA@' @<= 1 '<I<;' D<< 'G6<A=<@' = 'F . G6< <6 ' 'DA996<' C<' IA1 'G; K<F =' 9' . A

'EA=' 1 ' @ ' CA' AG 6< 'CA@' C G<@' '@<9<A' C<' <E' F A61 1 ' 9' B==1A' A @' B= ;1A' =BD=1@1M<@' D ' ?6A @& 9' EC1FC' +;B==1A' =C ; ' A9 <;EA;@=' D<FA . <' A' . < . D<;' D 'A' =<F;< ' ;<A ' =1? <@' A '

'' + =@A .' D< E<< ' 6<PA @<;' A @' ;<@<;1F>' 1661A .'N5' A @+;A p'AzY'Y A @' E' CA' C<' ; A@' ' @ 'EA=' F6 =<@& 1 ' D<FA . <' <F<==A; ' ' . A;FC' A?A1 =' C<' B==1A =' A @' B= ;1A =' 'C1 . @;<@' A @' E< ' C B=A @' B= ;1A =' E<;<' . A;FC1 ?' 1 ' C;<<' F ;G=' FA . GA1?' 9' :1 @<;' C<' ;FC@B><=' <;@1 A @& S C & A @' CA1 6<=' EA;@=' C<' C1 <' A @' C<' @1?<& A @' E ' B==1A 'A; . 1<=' E<;<' A@IA F1 ?' 'K 1 ' C<' . ' AG 6< & EC 'EA=' = 166' A ' C<' FA . G' 9' (B6 ? <& @1I1 <@' C<' F . D1 <@' . I< . < =' 9' C<' < < . 'N C1=' ?< 1B=' =B??<= <@' ' C1 . ' C<' = ;A <? ' <F<==A; ' ' < AD6<' C1 . ' ' IA J 1=C' C< . & A @' C<' 1 . . <@1A <6 ' @1F A <@' C<' G6A ' 9'A '1 . . ; A6'FA . GA1? ' 1 C1 ' E< '@A =' 61<' ;< FC' A; . 'GA==<@' 9; .' C<'<@?<' 9' C<' F<A ' ' C<'=C ;<=' 9' C]' C1 <' AG 0 6< 'F; ==<@' CA';1I<;'1 ' F D<;& "7&E1 C'A' CB @1 <@' A @'=1P ' C B=A @' . < & @1I1@<@' 1 '=1P' F ;G=& A @' A@IA F<@' D ' C<' 6G=' A @' BAD1A' AF; ==' 0<; . 1 ' C<'%A BD<' EA=' F; ==<@'1 '1 =' B; & A @' AG 6< 3=' 61<B < A =' 9 B?C 'A'=<;1<=' 9'?6 ;1 B=' F 961F =' B;A 'EA=' I1F ;1 B=' A ' <; 1 ?< 'A @

I' K'<M$A'<7@><K'$<'S>A'A<$LD#><@C' J@<S@@+'<M@'<SB' ABG@7@$ +A'<M><' 7DAA$>'AMBD#C' B33@7'$+' @?@ ; J@7'M@7' ; @C$><$B+'<B' <M@'<SB' J@##$ @7@+<' L>7<$@A'<_+' ?B+C$<$B+A'SM$?M'$<' >A'Q+BS+'<M><' >LB#@B+' SBD#C'+B<' >??@L<' >+C' <M><' $3' M@' C$C' +B<' >??@L<'<M$A'B33@7' 7DAA$>'AMBD#C'RB$+'<M@' ##$@C' BS@7A' >##@ $+ ' >A' >+' @N?DA@'<M@'G$B#><$B+'B3'M@7'<@77$1 <B7K'JK'<M@' 7@+?M'>7 ; K' M@'>J#@' 7DAA$>+' ; $+$A<@7'A@<' BD<'S$<M' 7@ 7@<'S$<M'<M@A@' $+A<7D?<$B+A'3B7' >LB#@B+(A'M@>C0aD>7<@7A'

' ' ' -

C< ';<F ? 1=<@' C1 . ' A @' =A6B <@' C1 . ' E1 C' AFF6A . A 1 ' 61<' EC 6<'61 <' =GA;>6<@' E1 C' 91;<=' 9 ;' C1=' ; G=' E<1'<' F<6<D;A 1 ?' C<' A 1I<;=A; ' 9' C1=' F ; A 1 ' A @' CA ' ?;<A ' @A ' D; B?C ' E1 C' 1 ' A' G;<=A?<' 9' I1F ; ' AG 6< ';< B; <@' 'C1=' < ' A @' . A@<' C1=' 91 A6' A;;A ?< . < =' 9 ;' C<' . ;; E' [(<; A@ <' _E166 F . . . @' C<' F< ;<' A @' B6 ' C<' ;1?C N' EC<;<' . B= 'D<' . A@<' C<' @<F1=1I<' <99 ; 'N A <=' E166' @<9< @' C<' 6<9 ' A @' C<' = ; ?' G =1 1 ' 9' A N' A; . <@' ; I1 C' A' DA <; ' 9' =1P << ' ?B =' N A @' 91 A66 ' %AI B= ' E166' C 6@' 1 ' FC<F>' C<' < < . 3=' 6<9 ' E1 ?' 66' C<' AIA6; '1=' @<;' C<' ;@<;=' 9' B;A 'N A @' E< ' 9' C<' D<= 'DA A61 =' _E166 9 ; . ' C<' ;<=<; I< ` 5 ' '

' C<' @' 9' %<F< . D<;' "7' A ' C<' . . < ' EC< ' C<' =B ' EA=' ;1=1 ?' BG ' C1=' 9A . B=' G6A1 ' EC1FC' C;<<' CB @;<@' =A r< 9' = < ' C B=A @' . < ' E<;<' AD B ' ' < <;' BG 'A;'@<A C' = ;B??6<'

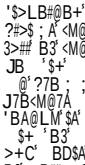
A @' EC1FC' EA=' ' D<' @<F1@<@' C<' 9A <' 9' C<' B= ;1A ' . A;FC ' AG 6< 'GA==<@' A6 ?' C<' 9; ' 9' C1=' ;<?1 . < =' A @' =A1@ , [' 6@1<;=' ź <' . B= '91 1=C' C1=' FA . GA1? ' . C' A' CB @<;F6AG' z` CB=1A= 1F' =C B =' #_HG61<@ 'C1 . ' A @' C<' DA 6<' F . . < F<@' C<' < < . ' = 166' ;<= 6I<@' ' B; ' C<' ;1?C ' 9' C<' ;< FC' A; . ' ADA @ <@' 1 ' C<' F< ;<' 9' C<1;' <E' 61 <' C<' C<1?C =' 9' +;A M< ' B6 ';<F<1I<@' ;@<;=' ' FFBG ' C< . ' A @' 1 . . <@1A <6 ' FA;;1<@' C< . ' - B B= 99' C<' ?< <;A6' 9' C<' B==1A ' A; . ' 1 . . <@1A <6 'G<;F<1I<@' C1=' <9; ;' A @'< @<AI B;<@' ';<GA1;'1 ' DB ' A66' C1=' <99 ; =' E<;<' 9;B1 1<==' A @' C<' ;< FC' F 1 B<@' ' FFBG ' 61<=<' C<1?C =' EC1FC' @1I1@<@' C<' < < . 3=' 61 <' EC16=' %AI B= ' C<6@' C1 . '1 ' FC<F>' ' C<' ;1?C ' ' C<' G6A1 ' A @' B;A ' A <=' A @' (<; A@ <' FA;;1<@' C1=' G;1 0 F1GA6' G =1 1 =' ' C<' 6<9 ' (B ' E' C<' FAIA6; ' 9' C<' B==1A ' . G<;1A6' 0BA;@' ;B=C<@' BG ' C<' 91<6@' 9' DA 6<' @1=G<;=<@' . A ' 9' C<' D;AI<=' 9' C<' ;< FC' DA A61 =' A @' B; <@' C<' 1@<' 9' F JB<= ' AG 6< ' =AE' C<' @A ?<;' A @' =< ' 9 ;EA;@' AGG' A ' C<' C<A@' 9' C<' FAIA6; ' 9' C1=' ?BA;@' 9 <;' A' <;;1D6<' =C F>' C<' B==1A =' E<;<' D; >< ' A @' @1=G<;=<@' A @' AGG' E1 C' A' D; >< ' =AD;<' A @' A' C ;=<' F I<;<@' E1 C' D6 @' ?A66 G<@' DAF>' ' ;<G ;' C1=' I1F ; ' C<' ;<=' 9' C<' < < . 3=' A; . ' EA=' @1'1I<' DAF>' BG ' C<' 6A><' ' ' A' 96A ' A @' =B;; B @<@' D ' A' F1;F6<' 9' 91;<' ;B=C<@' D ' FA=< =C ' C< 'A < . G <@' '<=FAG<' I<;' C<' 1F<' EC1FC' D; ><' D< <A C' C< . ' @' < ?B69<@' C< . ' 19 << ' C B=A @' B= ;1A =' A @' B==1A =' G<;1=61<@' E< ' C B=A @' E<;<' A>< ' G;1= <;=' A @' 9 ; ' 96A?=' E1 C' E 'CB @;<@' G1<F<=' 9' FA 'E<;<' C<' ; GC1<=' 9' C1=' . < . 0 ;AD6<' I1F ;

;1B . GCA C< 1 < ;A F< B99<;<@ <;;1D6< @1=A= <;= A >‹#@ ;A< 1<< B 1 <@ E1 C< C< GA 1=C 96<< B @<;C< F . . A @ @ . 1;A6 166< <B I<A9 <;CA I1 ?D<< D<A < A AG< +1 1= <;;<6 = C< = ;C5 ;A9A6?A; C1; C;<< ;< FC A @ GA 1=C =C1G= A @ =<I< 9;1?A <=E<;< D<A <;1 D E< =<I< ?61=C =C1G= 9 C< 61]A @9 B;9;1?A <= A @ C1; << I<==<6= 6 9 C< F . D1 <@ 969<< = <=FAG<@ C1= ?;<A I1F 1 EC1FC F = C< 619< 9 C< ?61=C @ . 1;A6 =<FB;<@ ?6A @ C< = I<;<1? 9 C< =<A= A @ AG 6< 6 ?<; A < . G <@ IA JB1=C C<; CA <6< . <

C< I1F ; 9 C< ?61=C A ;A9A6?A; EA= G; @BF 1I< 9 C< . = <;1 B= F =<JB< F<= C< B; 9 AG6<= EC1FC EA= B @<; C< F ; 6 9 C< I1 6< A @ I1 @1F 1I< LB<< A; 61 < C< E19< 9 <;@1 A @ # C1= B; 1 1 . 1@A <@ D AG 6< CA@ ;<F< 6 D B @ 1 =<69 D 33 ;WA } <B ;A61 M DB D<9 ;< 1 F B6@ 6<A; C< <E= <1 C<; 9 C< D 6F' 9 B= <;61 M ; 9 C< FAG1 B6A 1 9 6 . 1 ;<F<1I<@ 1 9 ; . A 1 B 9 ;0 B A <6 9 ; 1 =<69 CA + ;B==1A EA= AD B K 1 C< F A61 1 A @ CA Q C< ;< FC 96<< CA@ D<< @<= ; <@ A ;A9A6?A; 5 F F6B@<@ 9; . C1= CA AG 6< EA= 6 = A @ 1 . . <@1A <6 ;<F<1I<@ 1 CW >1 ?@ . E<6I< C B=A @ ?61=C A @ =1P C B=A @ B==1A = E1 C EC . E<;< K 1 <@ 9 ; C B=A @ <AG 61 A = 9 ; C< GB;G = < 9 <PF1 1 ? A6 ;<I 6 1 C< ;<A;9 C< ;< FC A; . 1 B= ;1A C1= G; FA 1I< A @ ;A=C F @BF FAB=<@ C< 9A@ 9 C< (B;D = 9 AG6<= EC E<;< ADA #@ <@ D + ;B==1A D B==1A A @ D B= ;1A 1 C# <? 1A 1 = 9 ; G<AF< EC1FC C< . G<; ; ;A F1= E< 1 G<;= @< . A @ 9 C1= IA JB1=C<; A9 <; C< DA 6< 9 B= <;61 M

AG 6< ?;A <@ A A; . 1= 1F< C< B= ;1A = A @ B==1A = A @ 91;= 9 A66 <? 1A <@ G<AF< E1 C + ;B==1A < CA@ ;<F<1I<@ 1 9 ; . A 1 9 C< ;<A F F6B@<@ D CA G E<; E1 C 6<PA @<; A C< F . . < F< . < 9 C< FA . GA1? A @ # GB 1=C 1 D < . D; 161 ? 1 E1 C ?6A @ C< 7@><K 9 FCo ;Z= 6I<@ CB . 161A < 1 C G;1@< D 9 ;F1 ? 1 AFF<G GA; ;A Y @YY 9 C< =G 16= 9 1 = 6@ A66 CB = C< C %<F< . D<; +;A=(1A "7 EA= =1? <@ A FCo D;B A A661A F< 99< =1I< A # @<9< =1I< D EC1FC ;A F< ;<?A;@1 ? A I<; A= 1 = H1D JB<= F<@<@ 1 + ;B==1A 1 <PFCA ?< 9 ; C< %BFC 9 6<I<= C< + ;1 F1GA61 ' 9 <B9FCT <6 A @ C< A; JB1=A < 9 =GAFC EC1FC AG 6< = <PFCA ?<@ E1 C (AIA;1A 9 ; C< %BFC 9 (<;?

< ' @A =' 6A <;(C<' G C' <F< . D<;(S AG 6< ' 9 ;F<@' ' D<' . G<; ;'
S =<GC' <' CA;@' ;<A "(9' +;<=DB;?(D ' EC1FC' B= ;1A' 6 =' L@>?@'B3' 7<A '
< < 111(+;1B61(= ;1A(%A6 . A 1A(<;;1 1 1<=' 1 ' EC1FC' E<;<' LG) ? E+CIY'
F . G;<C< @<@' ;1<= <' A @' C<' . B C=' ' 9' C<' A A; (
= ' 1 . G ; A ' 9 ;' AI1?A 1 ' A @' F . . <;F<' 'EA=' = 1GB6A <@' CA ' A '
C<=<' A <=' =C B6@'D<' 9 . <P<@' ' C<' >1 ?@ .' 9' A6 (9' EC1FC' AG 0
6< ' E ;<" C<' <; E (A @' EC1FC' EA=' ' D<' =BD=<JB< 6 ' =<GA;A <@' 9; .'
C<' ; E ' 9' ;A F<'N CB ' ' G<;1 @' 9 ;' C1=' =<GA;A 1 ' EA=' 91P<@ ' 3'
B= ;1A' F<@<@' C<' ; 6' ' (AIA;1A(A @' ;<F<1I<@' 1 ' <PFCA ?<(9 ;' C<'
' ;FC@ @F<' <;@1 A @(C<' <FF6<=1A= 1FA6' G;1 F1GA61 ' 9' B;MDB;?' ' D0
A1 <@' A6= ' 9 ;' C<' A@IA A?<' 9' A C<;' O ;A @ %B><' C<' =<FB6A;1MA 1 ' 9'
C<' G; 91 =' 9' C<' <B 1F' ;@<;(IA6B<@' A ' <' CB @;<@' A @' Y
" 919 ' C B=A @' 96 ;1 =' A' <A;' C<' E '<6<F ;A <=' 9' (AIA;1A' 9(AI1;11v #
A @' B; < . DB;F' E<;<' ;A1=<@' ' C<' ;A >' 9' >1 ?@ .=(A @' @7@2<@C'$+<B >1 ?@ .=("7
C<' . G<; ;' ;A F1=' ?AI<' BG' ' C<' I<;<1? =' 9' C<=<' A <=
A @' ' @1<' O ;K . @ %B><' 9' (A@< ' C<'A F1< ';1?C =' 9' C<' O<; . A 1F' . G1;<'
I<' ' C<' D161 ' F 1?B B=' ' C<1;' <;;1 ;1<=' 1 A66 (B= ;1A' CA@' '
GA ' 9 ;' C<' <PG< =<=' 9' C<' EA;' A' F ;1DB 1 ' 9' A' CB @;<@' . 1661 =(
EC1FC' EA=N =BD=<JB< 6 ' ;<@BF<@' ' <' CA69 '
C<' ;<A ' 9' +;<=DB;?(= ' ?6 ;1 B=' 1 ' . A ' ;<=G<F =' 9 ;' ;A F<(EA=' '
<I<; C<6<==(A=' E<;<' . =' 9' C<' ;<A 1<=' =1? <@' D ' AG 6< (6 ' A'
GAB=<' 1 ' C<' EA; ' ' EA=' 1 . G ==1D6<' CA ' C<' = A <' 9' 161 ?=' EC1FC' C<' CA@'
F;<A <@' BG ' C<' 1 < ' =C B6@'<I<;' D<' ;<?A;@<@' A=' 91 A6' D ' +;B==1A(
'EC1FC' EA=' 9A;' . ;<' CB . 161A <@' CA ' ?;A 191<@' A ' CA I1 ?' ;<FW1I<@' A I<;'
'_ 1 ' <PFCA ?<' 9 ;' <' 9' 1 =' E ' G; I1 F<=' N D ' B= ;1A(EC1FC' 1 ' <PA=G<0
;A <@' D ' 9 ;F1 ?' 1 ' ' . A><' 1 . . < =<' =AF;191F<=' N ;' 91 A66 (D ' ?6A @(
EC1FC(A=' E<66' A=' B==1A(;< . A1 <@' A; . <@(A @' EC1FC' CA@' 6 = ' 1 ' A I<;'
C<' GA ;1 . ' 9'1 =' >1 ?=' AG 6< ' D<61<I<@' C1 . =<69' A ' C1=' 1 . <' ' D<' '
C<' . A= <;' 9' B; G<(A @' A=' C<' =A1I' ' 61 . 1 ' ' C1=' G E<;(C<' =< ' <' '
(C1=' A . D1 1
' ;< B; 1 ?' ' +A;1=' A9 <;' A' D;1661A ' FA . GA1? ' 9' C;<<' . C=3 @B;A0
1 (AG 6< ' <PF1 <@' C<;<' B 1I<;=A6' < CB=1A= . ' P1FA <@' E1 C' C1=' '
(? @' 9 ; B <(C<' E' =<' ' E ;>' ' ;< . I<' C<' 6A=' I<= 1?<' 9' C<' <I 0
6B 1 A; ' 1 = 1 B 1 =' C<' <GBD61FA ' A6< @A;' EA=' ;<G6AF<@' D ' C<'
O ;<? ;1A ' A6< @A;(E611FC' EA=' < @ E<@' E1 C' A' <E' =A1 ' D ' A' @<F;<<' 5'
EC1FC' ;@<;<@' CA ' ' C<' 7 C' 9' B?B= ' C<' 9s <' 9' A1 ' AG 6W '
=61 B6@' D<' F<6<D;A <@' C; B?C B ' C<'< . G1;<' C<;' @<F;<<' @1;<F <@'



C; B?C B ' C< < . GD<ℕ 91BA66 ℓ C< FAB=<@ C< 6<?1=6A 1I< G E<;' '1 ; 0 @BF< A''F @< 9 F1I16 G; F<@B;< ;<G6< < E1 C <PF<66< ' P<EF 1 9 A;;A ?< . < =ℓ 1 'AFF ;@A F< E1 C' C< =1 . G6191FA 1 ' 9 C< L7B?@CD7@' 6AE A @ E1 C C< <E 9 ; .' 9 C< ;1DB A6=

' C< <A;' "O <I<; C1 ?' =<< . <@ ' . << ' C< . G<; ;3 E1=C<=' +1 ℓ 611=' 1;;<F F16AD6< < < . ℓ EA=' @<A@ℓ A @ + Pℓ C< 6<A@<;' 9 C< GA;61A . < A; ' GG =1 1 ℓ CA@ =BFF<<@<@ C1 . ' +AF191F <? 1A 1 =' E<;<' 1 . . <@1A <6 'F . . < F<@ D< E<< ' C< E ' G E<;=ℓ A @ AF 1I<6 'GB;=B<@ D ' < . 1 1= <;' A < BA @' (B ' G;1@< CA@ A6;<A@ 'D61 @<@ AG 6< ℓ A @ C< EA=' ;<= 6I<@ 'F . G6< < C< ;B1 ' 9 C< (B;D =ℓ EC ℓ'A6 C B?C @;1I< '9; .' C< 1 < ℓ = 1 ' ;<1? <@ 1 ' 1F16 ' < @< . A @<@ CA ' CA ' 1=6A @ =C B6@ D< A <P<@ ' C1=' D; C<;3 A <ℓ A @ ' 1 @BF< ?6A @ ' ' GG =< C1=' 9;<=C F JB<= ℓ C< 96 <;<@ 1 ' <PFCA ?< C< ;<= ;A 1 ' 9 A I<;ℓ EC1FC CA@ A6;<A@ 'D<< ' F<@<@ ' +;B==1A ' C1=' @< . A @ℓ EC1FC C1 ?' F 1@@ KB= 19 ℓ EA=' ' . BFC GG =<@ ' C< C B;' A @ C< F . . <;F1A6 1 <;<= =' 9 ?6A @ 'D< AFF<G <@' + P C1 . =<69ℓ 1 ' =G1 < 9 611=51 F61 A 1 ' 9 ;' G<AF<ℓ F B6@ ' @<G< @ℓ 19 C< =1? <@ 1 'A '=BFC A G;1F<ℓ BG ' C< =BGG ;' 9 +A;61A . < ℓ A @ C< <? 0 1A 1 =' E<;< D; >< ' 99

' C< . <A 1 . < AG 6< ℓ GB;=B1 ?' C1=' G; K<F ' 9 D A1 1 ?' B 61 . 1 <@ ;B6< 1 ' B; G<ℓ F . G6< <@ C< ;?A 1MA 1 ' 9 C1=' . 161 A; ' < . G1;< D ';< 0 @<;1 ?' C< 6@ O<; . A 1F F 9<@<;A 1 '@<G< @< ' ' C1 . ' ' C< C 9 SB6 ℓ "*ℓ 9 . << 'G;1 F<=' 9 C< = B C A @ C< E<=' 9 9<@<;A1 ' 9 O<; . A '9 ; . <@ C< 9<@<;A 1 ' 9 C< - C1 <ℓ A @ ;<F ?' B1=<@ AG 6< 'A=' C<1;' G; <F ;' C< F ' 9 9<@<;A 1 '<= AD61=C<@ CA ' C<;< =C B6@ D< D< E<< ' C< ;< FC < . G1;< A @ C< 9<@<;A <@ A <=' A ' A661A F< D ' I1; B< 9 EC1FC <1 C<;' 9 C< F ;AF 1 ?' GA; 1<=' EC1FC . 1?C 'CAI< ' < ?A?< 1 'A' F 1 < A6 EA;' EA=' 'D< =BGG ; <@ D ' C< C<;'ℕ A @ 1 ' F 9<;;<@ BG ' C< G;1 F<=' EC ' =1? <@ 1 ' ;1?C =' 9 = I<;<1? 'VI<;' C< . B6 1 B@< 9 G;1 F<=' A @ F B =' =BGG ; <@ D ' C< O<; . A ' <;;1 ; ℓ A @ IC ℓ A=' . < . D<;=' 9 C< @ ' !' CA@ 9 ; . <;6 ' 6 'D<< ' =BD=<;I1< ' ' C< . G<; ;' ;' O<; . A ' C1=' F 0 9<@<;A 1 ' < 9<<D6<@ +;B==1A' A @ B= ;1A' A=' . BFC A=' 1 'A@@<@ AGGA;< 6 ' ' C< G E<;' 9 AG 6< ' ' C B?C ' CA ' C< =C B6@ = ;< ? C< ' C1=' < . G1;< D 'F I<;1 ?' 1 ' ' C< ;1?C ' DA >' 9 C< C1 < E1 C A' F1;F6< 9 = A <=ℓ C< FC1<9=' 9 EC1FC E B6@ D< = ' . BFC C< . ;< @<I <@ ' C1=' 1 <;<= =' CA ' C< A6 < F B6@ ?BA;A << C< F 1 B<@ G ==<==1 ' 9 CA

E611F61 61 A6 CA@ ?1I< A @ C 9 ;? CA C @<<G6 E B @<@ A @ <PF1 <@ A?A1 = C1 . C A 1 A6 9<<61 ? 9 C<1;' G< G6<= EC E<;< 0<;0 . A = A C<A; D 9 ;F1 ?' C< . 1 =G1 9 C< . =<6I<= K 1 A' F 0 9<@<;A 1 EC1FC EA= EC 66 ; < FC C . G<; ; ;A F1= EA= A . ?= C = I<;<1? = 9 0<; . A C < EC =< ;1?C = E<;< . = 1 9;1 ?<@ BG D C< 9 1 . A 1 9 C< 9<@<;A 1 9 C< C1 <DB C< EA= E<A> ' . A>< A GG =1 1 1 A @ =BD . 1 1 ? C<

B$# B3 <#RB ! B7I 7B>+ ; L$7@ @<F;<< EC1FC CA@ D<< @<F6A;<@ A B= <;61 M CG AD@1FA <@ C< 1 6< 9 . G<; ; 9 0<; . A A @ ;< A1 <@ 6 B @<; C< A . < u 9 ;A F1= C< 1 6< 9 . G<; ; 9 B= ;1A EC1FC C< CA@ A==B . <@ 1 " A @ CB= < @<@ C< 0<; . A 1F . 0 G1;< A9 <;' 1 CA@x<P1= <@ 9 ; A C B=A @ <A;= 61AG 6< E =AE C< C11;<= G ; 1 9 B; G< <1 C<;' 1 F ;G ;A <@ E1 C ;A F< ;' 1 = IA==A6 < D<61<I<@ CA C< CA@ ;<A61M<@ C1= @;<A . A @ EA= 1 C1= E ' < <= C< . G<; ; 9 C< <= A @ C< ?< B1 =BFF<== ; ' CA;6< . A? < ' C< . <A 1 . < C< - 1 ? 9 + ;B==1A ;<@<;1F> 1 1A . , ?;<A 6 ' 1; ;10 A <@ A?A1 = AG 6< EC A9 <;' CAI1 ? ?BA;A <<@ C1 . ' C< G ==<==1 9 A I<; CA@ 99<;<@ 1 ' ?6A @ A @ . ;< I<; E1 C ? @ ;<A= A6A; . <@ A ' C< < F; AFC . < = 9 ;A F< A @ 1 = <I<; 1 F;<A=1 ? B196B< F< 1 ' B; G< , CA@ ;<= 6I<@ ' 9 ; . ' 1 ' 0<; . A ' A; '

B+3@C@7><$B+ B3 <M@ <><@A B3 <M@ 9<@<;A 1 9 C< A <= 9 C< ;4 ; C 1 GG =1 1 C< 9<@<;A 1 9 C< C1 <A @ C< =< ' A ' B6 1 . A B . ' C< . G<; ; ' 1 ' EC1FC C< @< . A @<@ A= A 91;= ' F @1 1 9 C< # A1 < A F< 9G<AF< C< ;< ;<A ' 9 A66 C< ;< FC ; G= 1 ' 0<; . A ' C< 9B; C<;' =1@< 9 C< C1 < AG 6< 1 @1? A ' A ' A' F A61 1 ' EC1FC C< ;<?A;@<@ A= A ' 1 =B6 E B6@ ' A66 E AP ' A @ C< A =<A 1F E = K 1 ' C< ; C<; ' <A?B< A @ ;<K<F <@ C< + ;B==1A ' B6 1 . A B . BG EC1FC ;<@<;1F> 1661A . ' @< <; . 1 <@ BG ' EA; ' C1= G;1 F< 1 IA@<@ AP N C< ;< FC A . DA==A@ ;' EA= 1 =B6 <@ 1 ' (<;61 A @ C< B11? A @ (<AB 19B LB<< ' 9 + ;B==1A ; @< 6B B?C C< = ;<< = 9 CA ' F1 ' 1 ' . 161 A; ' F = B . < ' <PF1 < C< EA;61>< < CB=1A= . ' 9 C< G GB6AF< ' [C< ;<=< . D6<= =A1@ AG 6< ' 1 ' ;<9<;< F< ' C<;[. G@< =< 1 ?

M@ 3B>7<M ?B>#$$B+ , 91;< ' C<;' GA6AF< C<=< E ;@= E<;< K1; GC< 1F 9 ;' ;A F< EA= @<= 1 <@ ' F;B=C C1= 9 B; C F A61 1 EC1FC IA= 9 ; . <@ D ' B==1A + ;B==1A E<@< A @ ?6A @ ' C< @<A C 9 P EC1FC FFB1;<@ = ' A9 <;' CA ' 9 +1 CA@ @<= ; <@ A ' C G< 9 ;<F F1CA 1 'D< 1I<< ' C< 6A <;' G E<;' A @ ;A F<

5 AG 6< ' < <;<@' BG ' C<' aKA . GA1? ' ' C<' C' 9' <G < . D<;(' A ' C<' C<A@' 9' A' CB @;<@' A @' 1 < ' C B=A @' . < (' A @' . A;FC<@' ' . << ' C<' +;B==1A ' A; . (' EC1FC' CA@' A6;<A@ ' 1 IA@<@' AP (' A @' EC1FC(' 1 F6B@1 ?' E< ' C B=A @' AP ' ; G=' EC1FC' CA@'K 1 <@' 1 (' F =1= <@' 9' A' CB @;<@' A @" E< ' C B=A @' = 6@1<;=(' EC ' F =1@<;<@' C< . =<6 I<=' 1 I1 F1D6<(' A=' D<1 ?' C<' C<1;=' 9' C<' AF 1F=' A @' C<' ?6 ; ' 9' C<' O;<A ' ;<@<;1F>' =' . . A @<; 1 C1<9' EA=' C<' 6@' %B><' 9' (;B =E1F>(' EC ' CA@' D<< ' F<6< "' D;A <@' 1 ' C<' <I< ' <A;=3Q A;(' DB ' A' ?;<A ' B . D<;' 9' C<' ; G=' E<;<' B @<;' C<' 1 . . <@1A <' F . . A @' 9' C<' B ?' +;1 F<' 9' C< 6 C<(' EC .' C<' - 1 ?' CA@' ;< @<;<@' A6 . = ' 1 @<G< @< ' 9' C<' . . A @<; 1 C1<9 AG 6< ' . A <B' I;<@' 5E1 C' <P ;< . <' F<6<;1 ' = ' A=' ' =B;; B @" C<' < < . (('FB ' 9' C1=' F . . B 1FA 1 =(' A @' F6 =<' A?A1 = 'C1 1' C1=' g9 61 <' 9' ;< ;<A ' C<' < < . ' EA=' =BFF<==1I<6 ' @;1I< ' DAF>' ' FC6<1 M' A @' ' AA69<6@' C<' 6A= ' 9' C<=<' E ' F 961F =' F = ' C<' 619<' 9' C<' B ?' +;1 F<' B1=' 9' +;B==1A(' < 9' C<' . = ' <A?<;' 1 = 1?A ;=' 9' C1=' EA;(' EC1FC' EA=' = ' @1=A= ; B=' 9 ;' C1=' F B ; ' ' 9<E' @A =' A9 <;EA;@=' C<' ;< FC' A; . (' A=' 1 ' EA=' G;<GA;1 ?' ' F; ==' C<' AA6<' A ' C;<<' G 1 =(' < F B <;<@' A ' S< A A' ?;<A ' G ; 1 ' 9' C<' +;B==1A ' A; . ' B @<;' +;1 F<' C< 6 C<(' EC .' (;B =E1F>' CA@' ;@<;<@' ' AI 1@' A' ?< <;A6' AF 1 (' A @' ' ;< ;<A ' BG ' C<' 6D<' ' EA=' ' 6A <' ' D< ' C1=' ;@<;N AG 6< ' ;@<;<@' C<' A AF>' A @' A' ?< <;A6' B3' '@+E < ?A?<. < ' < =B<@' 1=' I1F ; ' _EA=' A=' F . G6< <' A=' 1 ' IA=' G@7A<DC?' ;AG1@'N C<' +;B==1A =' 6 = ' 1 ' A' 9<E' C B;=' E<6I<' C B=A @' . < ' >166<@' ;' B @<@(' 919 << ' C B=A @' G;1= <;=(' A' . B6 1 B@<' 9' 96A?=(' A @' E '(' CB @;<@' G1<F<=' 9' FA ' ' C<' =A . <' @A (' 9 B;' C ;B;=' 6A <;# A;=CA6' %AI B= (' EC ' FFBG1<@' A' = ; ?' G =1 1 ' A ' I<;= A@ (' CA@' ' =B= A1 (' E1 C' E< 91I<' C B=A @' . < ' A @' A' 9<E' DA <;1<=(' C<' A==AB6 ' 9' =1P ' C B=A @' +;B==1A =' F . . A @<@' D ' (;B =E1F>N <' . A3@<' A ' C<; 1F' @<9< F<(' 5D<A ' 99' C<' < < . (' >' A6 . = ' A66' C1=' A; 166<; (' A @' GB ' < ' C B=A @' . < ' # ' ' - @ ' C<=<' 9;=I ' ?;<A ' DA 6<=' @<F1@<@' C<' FA . 0 GA1? ' ' G ; 1 ' 9' C<' I1F ;1 B=' A; . ' . A;FC<@' ;AG1@6 ' BG ' ;9B; (' EC1FC' FAG1 B6A <@N A @' A' ;<=<;I<' F ;G=' 9' C<' < < . (' B @<;' C<' +;1 F<' 9' B; < . D<;?(' EA=' =B;G;1=<@' A @' F . G6< <6 ' IA JB1=C<@' A ' A <' D ' 0< <;A6' %BG ' C<' @1= ;?A 1MA 1 ' 9' C<' +;B==1A ' A; . ' EA=' A6;<A@ ' F . G6< <N 1 =' IA;1 B=' F ;G=' . A;FC<@' A=' C B?C' A ' CAMA;@' A @' 1 ' @199<;< ' @1;<F 1 =(' B @<;' C<1;' =<I<;A6' ?< <;A6=(' C<' %B><' 9' <1 . A;(' (6BFC<;(' A @' - A6>;<B 11 ' C<' - 1 ?(' A9 <;' C<' DA 6<' 9' I<;= A@ (' 1 ' E611FC' C<

7 * 8 ! - 8 ! W" ! ! - - " : !> 8 * -

%B>< (1 = . F> EA= . ; A66 E B @<@ CA@ D<= E<@ C< FC1<F . 0 . A @ 61G C< +;1 F< C< 6 C< DB C< 6A <; CA@ =<< C1= ; G= @1=G<;=<@ ; @<= ; <@ A @ E1 C C< 9 ;F< CA ;< . A1 <@ G; F<<@<@ A?@<DB;?

C1 ? E'G;<I< <@ AG 6< '9; . . A;FC1 ? I1F ;1 B=6 EA;@ < FFBG1<@ 1 =BFF<==1 <1GM1? 1 < . D<;? A @ > # (E 1 %<==ABM F; ==<@ C< 6D< A C;<< G 1 = A @ C< C 3 Y 9 F D<; "* A C< C<A@ 9 A A; . A @ AFF . 0 GA 1<@ D A;=CA6= (<; C1<;Q %B; F B?<;<AB A @ %AI B= < <;<@ B+ ; $! A< B3'B (<;61 & 1 ;1B . GC Y C< 61 < 9 C< @<; A= G; . G 6 @A<& &A $+ B;A E1 C C1= FAIA6; B6 A <= A @ (<; A@ < E1 C C<1; 1 I1 F1D6< 1 9A ; F . G6< <@ C< F JB<= 9 <= <; A @ B C<; + ;B==1A A= 9A; A= C< =C ;<= 9 C< (A6 1F C< +;1 F< 9 C< 6 C< FAG1 B6A <@ A @ =B; ;<G@<;<@ E1 C =1P << 11 B=A @ . < A + ;< M6 E (6BFC<; 96<@ 9 ; ;<9B?< 1 C< 9;<< E 9 rD<F> EC1FC EA= FA; ;1<@ D A==AB6 A @ =B; ;< @<;<@ B;A E1 C C1= F ;G= C< 9 ; ;<==<= 9 < 1 B= ;1 A @ A?@<DB;? G< <@ C<1; ?A <= C< ;< FC ; G= CA ;< . A1 <@ 9 C< ?;<A + ;B==1A A; . EA= A>< ?< C<; E1 C A 1 . . < =< #$ 9 EA;N A @ 9x C< CB @;<@ A @ =1P C B=A @ . < EC 9 ; . <@ CA A; . A C< F . 0 . < F< . < 9 C< EA; < ;<GA==<@ C< @<; C< 1 . 9 ; B A < ;<@<;1F> 1661A . ;< ;<A <@ - o 1?=D<;? EC<; < C< F F< ;A <@ C1= 6A= ;<=<; I<= A @ C< @<=G 1F A @ . 161 A; . A;FC 9 ;<@<;1F> C< O;<A AGG<A;<@ CA I< D<< E1 C1 A . C A6 . = A 1C16A <@

AG 6< <I<; EC<; < I1F ;1 B= ;AI<;=<@ C< 91<6@ 9 C< DA 6< 9 =DAFC EC<; < C1= G;<=< F< <91AF<@ C< A99; C EC1FC C< ;< FC A; . = CA@ D<< =BDK<F <@ 1 C< 6A= F< B; < I1=1 <@ A + =@A . C< . D 9 ;<@<;1F> C< O;<A A @ > G ==<==1 9 C1= ?6 ;1 B=

I >LB#@B+ 7@AL@?<@C <M@ ?$<K B3 @7#$+ >+C AMBS@C <M@ $0@+<@A< 7@ >7C 3B7 <MB $+M>J$<>+<A B3<M>< ?$<K SM$?M M@ MB+BD7@C JK > 7@>< >?< B3 ?#@ ; @+?K @ #@3< <M@ ; ++$?$L># >D<MB$$<K $+ <M@ M>+CA B3<M@ 7DAA$>+ ; > $A<7><@A >< <M@ M@>C B3 SMB ; S>A <M@ 7$+?@ B3 >V3@#C <M@ ?$G$# BG@7+B7 B3 @7#$+ MB #><<@7 S7B<@ <B #D?M@7 AB ; @ $+3B7 ; ><$B+ S$<M 7@AL@?< <B <M@ A$<D><$B+ B3 <#$@ 7@+?M <7BBLA $A #@<<@7 S>A $+<@71 ?@L<@C >+C <M@ L7$+?@ JK >LB#@B+(A B7C@7A S>A <7$@C JK > ?BD7<0 ; >7<$># >A > ALK >+C > <7>$<B7 $A @N@?D<$B+ >LL@>7@C ?@7<>$+ SM@+ M$A S$3@ <M@ 7$+?@AA B3 >V3@#C <M7@S M@7A@#3>< <M@ ; L@7B7(A 3@@< P B KBD 7@?B +$A@ KBD7 MDAJ>+C(A M>+CS7$<1 $+ c ((A>$C <MB ; L@7B7 AMBS$+ M@7 M$A #@<<@7 M@ 7@ ; >$+@C A$#@+< >+C A@@ ; @C G@7SM@# ; @C S$<M C@AL>$7 P M7BS <M@ #@<<@7 $+<B <M@ 3$7@ O A>$C <M@ ; L@7B7 M>+C1 $+ $< <B M@7 P >+C <M@ ?BD7<0 ; >7<$># S$## J@ ?B ; L@##@C <B >?aD$< M$; O

=E ;@' < C< ' B=<@' C< ;1?C =' F 9<;;<@' BG ' C1 .' D ' I1F ; ' A @' @1=G =<@' 9' F; E =' D 'C1=' @<F;<<=' C< 6<F ;' 9' <==<' D<9 ;< C< EA;' CA@' ;<9B=<@' ' @1=A; .' A ' C1=' @< . A @' A @' E1 61 B ' G< 6 ' @<F6A;1 ?' AK?A1 =' AG 6< ' CA@' 6 AEA1 <@' B 1' = . < ;<I<;=< =C B6@' I<; A><' C< . G<;1A' A; . =' ' ; . 1 < C1=' ; G=' E1 C' C =< 9' +;B==1AN' A @' AG ' ' F ' E GB 1=C<@' C1 .' D ' @<G;1I1 ?' C1 .' 9' C1=' A <=' C< 6<F ;' 9' R AP ' A ' <= 1 . AD6<' +;1 F<' EC =< A <=' E<;<' ' A' FW; A1 ' <P < ' @<G< @< ' ' +;B==1A' CA@' D<< ' F . G<66<@' ' 9 66 E' C<' 9 ; B <=' 9' 61A '_ . A;FC ' ' EA=' E1 C' ;<?;< ' CA ' C< CA@' A><' BG' A; . =' A?A1 =' +;A F<' A @' A9 <;' C< EA;' C<' D<FA . <' A' . < . D<;' 9' C< ' [[+K'?7@><@C' 9<@<;A 1 ' 9' C< C1 <' C< . G<; ;' @<F6A;<@' C1=' A <=' ['[[=@ .' 1 @<G< @< ' 9'+;B==1A' A @' ;A1=<@' C< .' ' C< ;A >' 9' A'>1 ?@ ;

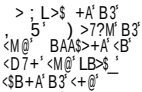
1F ;1 B=' C E<I<;' A=' C< EA=' ' C< 1 < ' C1@' I1F ;1<=' F B6@' CAI<' ' @B;AD6<' ;<=B6 'B ' ?6A @' =C B6@' D< 9 ;F<@' ' . A><' G<AF<' CA 'G E<;' E B6@' CAI<' AFF<G <@' 1 ' 19' AG 6< ' CA@' D<< ' E1661 ?' ' 1 . 0 G =<' =t . <' =AF;191F<=' ' C1 . =<69' ;' C< . < . D<;=' 9' C1=' 9A . 16 ' A @' ?1I<' BG' C =<' <;;1 ;1<=' EC1FC' E1 C B 'D<= E1 ?' A ';<A6' A@IA A?<=' ' ;A F<' <;<' 1 'C1=' CA @=' A' G<;G< BA6' = B;F<' 9' CB . 161A 1 ' ' C<' = I<;<1? =' 9' B; G<' (B ' AG 6< ' G;<9< '<@' ' CAI<' ;<F B;=<' ' A' 9;<=C' @<=G 1= . ' A ' B C<A;@ 9 'G6A ' '9 ;F<' ?6A @' ' =BD . 1 ' ' C<' = ' I< . 0 D<;' "*' C<;<' AGG<A;<@' A ' (<;61 ' 61 ' 9A . B=' @<F;<<' 9 ; <' D6 F>A@<' 9' B<' (;1 1=C' 1=6<=' C1=' @<F;<<' = A <@' C< $ @?7BB'B3',<M@ 1 < H' J#BBQ>C@',

I1 6A 1 =' 9' C<' 6AE' 9' A 1 =' F . . 1 <@' D¯' ?6A @' C<' ADB=<' 9' C<' ;1?C ' 9' F JB<=' F . . 1 <@' D ' C<;' ' @1<' =<A=' 1 ' <=G<F ' ' =C1G=' 9' F . . <;F<' A @' C<;' ADB=<' 9' C<' 6AE' 9' D6 F>A@<' 1 ' G;<I< 1 ?' A ' C<;' E1L' 1 <; A 1 A6' . A;1 1 . <' F . . B 1FA 1 =' ' C< ' G; F<<@<@' ' @<F6A;<' C<' (;1 1=C' 1=6<=' C< . =<6I<=' 1 ' A' = A <' 9' D6 F>A@<' N 1 <;@1F <@' A ' F . . <;F<' ;' F . . B 1FA 1 'E1 C' C< .' N A @' ;@<;<@' C< <1MB;<' 9' A66' (?C=C' G<;= =' A @' ?61=C' . <;FCA @1M<' EC1F61' =C B6@' D ' 9 B @' ' C< <;;1 ;1<=' 9' ;A F<' ;' ' C =<' 9' C<;' A661<=' I<; ' A 1 ' EC1FC' @1@' ' =BD . 1 ' ' C<' = = < .' =<' 9 ; C' 1 ' 611=' @<F;<<' EA=' @<F6A;<@' D ' 1 ' ' D<' A ' < < . ' 9' ;A F<' CP1=' EA=' <= AD61=61<@' C< 1 < A6' = < . ' = ' FA66<@' D<FAB=<' 61<' D61?A 1 =' EC1FC' < <F1 =' 5, 1 . G =<@' . B=' A99<F ' 61<' EC 6<' 1 < ' ' EA=' 1 0 @FFGF KB;1 B=' ' C<' 1 <;<= =' 9' <I<; ' A 1 ' A @' EA=' G;<? A ' E1 C' <' ?;<A ' <I16' EC1FC' AG 6< ' 91116<@' ' A><' =B991F1< 6 '1 ' AFF B ' ' A < . G ' 1 '9AF ' 'G;<I< ' C<' . <;FCA @1M<' 9' ?6A @' 9; .' < <;1 ?' A ' B;

G<A G ; EA= F . G<6 C< ?61=C 1 =<69 @<9< F< F6 =< C< =<A= 9 EC1FC C< E<;< C< . A= <;= A?A1 = C< I<==<6= 9 <I<; A 1 C1 EA= 1 1 = B; 1 961F C< ?;<A <= 1 . 1=<; BG C< G GB6A 1 = 9 61< ; C A @ C< = B C EC .F . . <;F< E1 C ?6A @ EA= A I1 A6 <F<=0 =1 A @ = E C< =<<@= 9 A D= 1 A <;<=1= A F< A @ 1 . G6AFAD6< CA ;<@ C1= = = < . @ BD 6<== 1 961F <@ 1 . . < =< 6 == BG ?6A @ A @ 9 ;F<@ BG C<;< <PG< =<= EC1FC G; @1?1 B=6 1 F;<A=<@ C<;< A6;<A@ < ; . B= @<D DB 1 @1@ G6AF< CA G E<;A C<;;1IA63= @1=F;< 1 A= AG 6< CA@ C G<@ DB 6<@ C<; C< F ;A; A@ G A =<;1<= 9 I1 6< A @ ?1?A 1F . <A=B;<= EC1FC G;<F1G1 A <@ C1= 9A66 & ;<@<;1F> 1661A . A6 C B?CIA JB1=C<@ A @ A6 . = < 1;<6 @1=G ==<==<@ CA@ 6 = A66 C G< < CA@ F 66<F <@ D< E<< C ; A @ - o 1?=D<;?(B @<;< O< <;A6 <= FJ AD B C1; C B=A @ . < C1= 6A= ;<= B;F<(A @ B==1A ; G= B @<;< 6@ O< <;A6 - ;A . 1 =>1 A@IA F<@ C1= A1@ AF; == + 6A @ %1I1@<@ 1 E F ;G= B @<;< O< <;A6= (< 1 ?M< A @ (B 9@< C< C< AGG; AFC<@ C< 1= B6A(A @ E B6@ CAI<(A AF><@Y C< ;< FC 1 F F<; E C C< +;B==1A =19 C< CA@ D<< G;<I< <@ D C<1;< ;AG1@ . I< . < = 1F ;1 B= C< 91<6@= 9 S< A @ I<;= A@ (BG 1F < <;= S##G 6< CA@;<= 6I<@ . A;FC 91?C C< B==1A = C< + 6A @ G6A1 = 9 + 6A @ <J<1I<@ E1 C < CB=1A= . D C< +J6<=(A @ <=G<F1A66 1 C< %BFC 9 + =< (C< G; G =<@ ;<GA1;5 C< ?;<A E; ?F . . 1 <@ 1 C< 6A= F< B; (A @ ;< <= AD61=C C<A F1< >1 ?0 @ . 9 + # @ <I<; C<6<==(C< @1@ 1? ;< C< B . <; B= G<;16= A < @1 ?=BFC A < <;G;1=< C;<< G E<;=(B==1A(+;B==1A(A @ B= ;1A(D<1 ?1 <;<= <@1 C< @1I1=1 9 CA >1 ?@ .# A @ C< . A1 < A F< 9 C< <P1= 1 ?= ;@<;< 9 C1 ?= C< + 6<= C< . =<6I<= AGG<A;<@ D< @1I1@<@ C< =BDK<F C< ?;<A D6<= 9 A;=AE =<< . <@ (D< DB 61 6< 1B B 1= E1 C C< D6<= 9 C< G; I1 F<=(A @ @1= ;B= D C C< =1 F<;1 9 AG 6< 3(1 < 1 = A @ C1= G E<;= 9 AFC1<I1 ?= =BFF<== (<9 ;< <PF1 1 ?A @ A>1 ?GA; 1 A G GB6A;. I< . < (1 @<=1;<@ CA AG 6< =C 1@@ G; F6A1 . C< 9;<<@ . 9 + 6A @(A @ ?1I< 1 A >1 ?9; . C1= #I 9A . 16 N EC16= C< . G<; ;(C< C<;< CA @(@< . A @<@ CA A =1 . B60 A < B= ;1=1 ?= 9 C< EC 6< G GB6A 1 =C B6@ G;<F<@< C1= @<F6A;A 1 9 1 =1 @<G< @< F< (<1 ?= B AD6< D A1 C1=(C< C B?C 1 G;B@< @<9<;< A 9B B;< G<;1 @ C1= @<=1? = E1 C ;<=G<F C1= A F1< >1 ?@ . E ;< FC A; . 1<=(<AFC F =1= 1 ?= 9 AD B <1?C C B=A @ . < (A @

@1 I 1@<@' 1 ' 1 <' F ;G=&' . A;FC<@' BG ' C<' 1= B6A' A ' C<' F . . < F< . < ' 9' I< . D<;' B;A &' %A I B= &' B?<;<AB&' A @' A <=' F . . A @<@' C<' 91;= 'N A @' AG 6< '1 ' G<;= ' F . . A @<@' C<' =<F @&' EC1FC' F =1= <@' 9' < 3=&' B6 3=&' A @' (<; A@ <3=' F ;G=&' C<' ?BA;@&' A @' C<' ;<=<; I <= ' ' C<" @' %<F< . D<;&' C<' A 1I<;=A; ' 9' C1=' F ; A 1 &' C<' A@@;<==<@' C<=<' E ;@=' 'C1=' A; . ')' [6@1<;=' 1=' A' <A;' @A &' A @' C1=' I<; 'C B;&' CA ' B' E<;<' ' C<' . < . ;AD6<' 91<6@' 9' B= <;61 M ' C<' B==1A ' DA A61 =' <1 C<;' 96<@' 1 ' <;; ;' D<9 ;<' B&' ;&' B AD6<' ' 96 &' 6A1@' C<1;' A; . =' A ' C<' 9<<' ' 9' C<1;' I A JB1=C<;=' C' &C<' 9 66 E1 ?' @A ' C< 'D<??<@' 9 ;' G<AF<' (B ' C< ' E<;<' ;<AFC<; B=' C< ' CA@'=FA;F<6 ' <=FAG<@' 9; .' C<' @A ?<;=' @ ' EC1FC' C<' C1;@' F A61 1 CA@'<PG =<@' C< . 'EC< ' C< '9 ; . <@' A' 9 ;1; C' (B ' C<' A66 ' 'EC =<' AF 1F=' C< '9 B @<@' C<1;'G;1 F1GA6' C G<=' 1=' ' . ;<' Q 1=' 9 ; ;<==<=&' C1=' FAG1 A6=&' C1=' . A?AM1 <=&'S11=' A;=< A6=&' E ' CB @;<@' A @' <1?C ' 96A?=&' =<I< ' CB @;<@' FA &' A @' 91I<' ?;<A ' 9 ; ;<==<=&' A;<' 1 ' B;' G ==<==1 ' I<; C1 ?' CA=' ?1I< ' EA ' D<9 ;<' B' ' 1=' 1 ' I A1 ' CA ' C<' B==1A =' CA I<' A < . G <@' ' @<9< @' C<' FAG1 A6=' 9' 6@' A @' 166B= ;1 B= 6A @'N C<' ;< FC' <A?6<' C I<;=' I<;' C]' 1= B6A ' C<' DA >= 9' C<' (6D<' A @' C<' @<;&' E<' CA I<' F JB<;<@' C<' @1A ' F 6 1<=' D<6 ?1 ?' ' C<' ?61=C&' C<' AG<' 9' 0 @' G<&' A @' C<' GA 1=C' FFp6 1<=' CA ' E166' < AD6<' C<' B==1A =' ' ;<I<;=<' = ' ?;<A ' A' @<= 1 ' A=' B;=' c' ' ;<' E<' '' C<' = 6@1<;=' 9' ;1= <;61 M' c~' C1=' CAB?C ' A@@;<==' =B991F1<D 6 ' . A 19<= <@' CA ' G<AF<' D< E<< ' ?6A @' A @' AG 6< ' EA=' 1 . G ==1D6<

' ?;<A ' B . D<;" 9' 1 @<F1=1I<' F 961F =&' 1 ' EC1FC' C<' ;< FC' ?< <;A66 ' CA@' C<' A@ I A A?<&' >' G6AF<' A ' C<' F . . < F< 1< ' 9' C1=' 5FA . GA1? 'N A @' ' C<' * C' 9' %<F< . D<;' C<' ;< FC' D A1 <@' A' @<F1=1 I<' I 1F ; ' A '+ B6 ' B=>&' EC<;<' A;=CA6' A <=&' E1 C' E< C;<<' C B=A @' . < ' A @' A' 9<E' _G1<F<=' 9' A; 166<; &' I A JB1=C<@' A @' ;<GB6=<@' (< 1 ?M< 3=' @1 I 1=1 &' EC1FC' IA=' . BFC' . ;<' B . <; B=' C<' 1 F6< . < F ' 95 C<' =<A= ' A @' C<' . A;=C ' A B;<' 9' C<' = 16&' EC1FC' EA=' ;< @<;<@' 1 . GA==AD6<' D ';A1;6' 5 A . < ' 9 A @' = E&' F . G<66<@' AG 6< ' ' CA6 ' 1 ' + 6A @&' EC<;<' C<' YW GA==<@' C<' E1 <;' <' G = <@' C1=' I A;1 B=' F ;G=' 1 ' 9; ' 9' C<' 1= B6A&' D< E<< ' 6D1 ?&' <A;' C<' (A6 1F&' BG' ' A;=AE ' ' C<' R=A . <' 1 . <' C<' A AF><@' C<' G;1 F1GA6' 9 ; ;<==<=' 1 ' 16<=1A&' EC1FC' 9<66' =BF0 F<==1I<6 ' 1 ' C1=' CA @=&' EC16=' A' < C' F ;G=&' B @<;' A;=CA6' <9<DI;<&' R A=' @< AFC<@' ' 1 I<= ' %A M1F



C< B==1A ' ?< <;A6 (< 1 ?M< C E<I<;@<F<1I<@ C< . G<; ;3 <PG<F A 1 =N C ' I< B;<@ 'FA;; ' ' C< FA . GA1? ' @B;1 ? C< QE1 <;A @ < @<AI B;<@ ' =B;G;1=< C< ;< FC A; . ' 1 ' 1 = FA . < = D ' B; 1 ?1 = G =1 1 = ' C< =C ;< C< (A6 1F A @ F; ==1 ? C< 1= B6A E1 C C< +;B==1A ' F ;G= 9 O< <;A6 <= FJ D< E<< ' C . ' A @ A;1< 0 DB;?' (B ' C1= G6A ' EA= @1I1 <@ A @ 9;B= 1 A <@ < ' @1=F I<;<@ C< - B==1A = A @ (<; A@ < = GG<@ C<1;' A@IA F< A ' <C;B ?< ' C< ' (< 1 ?M< ' C<=1 A <@ A @ C< F F< ;A <@ C1= 9 ;F<= A ' BD= A@ 9; . ' EC< F< C< . A;FC<@ ' C< = ; ? G =1 1 ' 9 S > ;I 1 ' C< ;<A;' 9 < = <1 EC<;< C< < ;< FC<@ 611 . =<69 EC16= ' AG 6< ' D; >< X < ' # ' FA . G= A @ ;<=B . <@ C< 99< =1I< E1 C 'A' CB @;<@ : O H ' C B=A @ . < ' C< . G<; ;' A=F< @<@ C< A;<E A @ C< ' G; F<<@<@ AF; == C< 9;1?C 9B . A;=C<= 9 + 6A @ EA;@= 66< ' = <1 1 ' ;@<;' ' B; 1 ' C1= B; C< 6<9 ' 9 C< +;B==1A = A @ B= ' =1A = A @ @;1I< C< . ' 1 ' C< =<A' < A AF><@ C< < < . ' 1C C1= 9 ; . 1@AD6< < ;< FC . < = A ' S > ;I ' (B ' (< 1 ?M< '@A;<@ 'AEA1 ' C1=' AGG; AFC A @ 9<66 DAF>' D<9 ;< C< ;< FC EC ' @<=F< @<@ C< F B;=W 9 C< < 1 ' GB;=B1 ' 9 C1 . A @ CA@ =<I<;A6 @<=G<;A < < ?A?< . < = E1 C C< B==1A ' A @ +;B==1A ' A; . 1<= ' (< 1 ?M< ' CA6 <@ D< @ 6AB A @ >' BG' A' G =1 1 ;<= 6I<@ '?1I<' DA 6< A= = 'A= O< <;A6 <= FJ' A @ C< +;B==1A = =C B6@ A;;1I< '

C< AF 1 ' F . . < F<@ D ' A' 9;1?C 9B FA A@< ' D C =1@<= A @ 9: 'O ' 9 ;< FC A; 166<; ' <=G<F1A66 ' . A@< 9;1?C 91@ ;AIA?<= 1 C< B==1A ' A; . A E611FC G;<=W <@ 1 ' 9; ' 9 6AB A' F . GAF ' A @ 9 ; . 1@AD6< 9; ' AG 6< A CA I1 ? B6 3= F ;G= ' ;1= 6<9 1 ' C< F1 ' 9 6AB 1 =<69 A @ %AI B= ' ' C1=' ;1?C A @ G6AF<@ C1 . =<69 1 ' A' F< . <0 <; ' @<9< @<@ D ' A' 9<E ' DA A61 =' %AI B= ' CA@ A6;<A@ ' B; <@ C< < < . 3= 6<9 EC< ' A ' < ; . B= . A== 9 B==1A ' 1 9A ; ' EA= C; 1 1 A?A1 = ' C< ;< FC F< ;<' AG 6< ' ;@<;<@ A1 16A1;< A @ B?< ' ;<AB ' . << ' C1=' 9 ; . 1@AD6< F 6B . ' E1 C C<1;' @1I1=1 = ' (B ' C< = I 9<66 1 ' . A==<= A @ D61 @<@ B?<;<AB3= 6@1<;= = ' CA ' C< ' 6 = ' C<1;' EA ' A @ . 1=6<@ C< @1I1=1 = EC1FC E<;< ' =BGG ; ' C< . ' C< B==1A = C;<E' C< . =<6I<= 1 ' C< 1 <;IA6= A @ =B@@< 6 ' B . A=><@ 1 < ' G1<F<= 9 A; 166<; ' EC1FC . E<@ @ E ' CA69 B?<;<AB3= F ;G= E1 C ?;AG<Y' C< < < . 3= F 6B . ' A@IA F<@ 1 ' . A==<= A @ A' =C ; ' @1= A F< 6 ' 1 <;

I< <@' D< E<< ' 1 ' A @' C<' F< . < <; ' 1 ' EC1FC' AG 6< ' CA@' A>< ' G' C1=' G =1 1 ' C<' . G<; ;(' G<;9<F 6 ' 1 A JB1(' A ' C1=' F;1 1FA(' . . < (' 6A1 . FC<@' A?A1 = ' C<' - B==1A =' C<' EC 6<' 9' C1=' FAIA6; (' EC1FC' EA=' F . 0 . A @<@' D ' B;A (' A @' @<;' C1 . ' D ' 0 ; BFC (' @3 AB G B(' A @' <G1F ' B;A (' A ' C<' C<A@' 9' <1?C ' =JBA@; =(' 9<6(' BG ' C<' < < . ' E1 C' A' ;< . < @ B=' @A=C' A @' D; >< C1=' 9 ;< . = ' ;<?1 . < =(' @ ; 1 I 1 ?' C =<' EC1FC' 9 66 E<@' DAF>' BG ' C<' . A1 ' D @ ' A @' 1 ' C<' <1?CD B;1 ?' E @=' E1 C' 9;1?C 9B(' FA; A?<' &

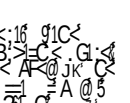
C1=' G<;1(' CA I 1 ?' D<< ' CB=' ;< . I<@(' C<' ;< FC' 6<9 ' E1 ?' B @<;' %A I B= ' =BFF<<@<@' 1 ' B; 1 ?' C<' B==1A =(' EC< ' C<' + ; B=AA =' AGG<A;<@' A @' C<6@' 1 ' 1 ' FC<F>' C<' 1?C ' FA . <' N' (< 1 ?M< (' EC ' CA@' 6 = ' C<' C1;@' GA; ' 9' C1=' A; . (' C<=1 A <@' ' ;< 1;<' N' DB ' < (' EC ' CA@' 9 66 E<@' C<' + ; B==1A =(' AGG<A;<@' 1 ' C1=' 1B; ' 1 ' C<' ;<A;' 9' C<' B==1A ' A; . (' A @' C<' 6A <;' 1 . . <@1A(<6 ' D<?A ' 1(' ;< ;<A ' ' FA; ;1<@' AEA ' E1 C' 1 ' 919 << ' C B=A @' E B @<@(' 6<A I 1 ?' . ;<' CA ' E<6I<' C B=A @' . < ' ' C<' ?; B @(' A @' . A ' C B=A @' G;1= <;=' 1 ' C<' CA @=' 9' C<' I 1F ;=' C<' 6 ==' 9' C<' ;< FC(' E1 C B ' F B 1 ?' C<1;' E B @<@(' EA=' AD B ' < ' C B=A @' . <

C<' G6A1 =' 9' 6AB(' I<;' EC1FC' C<' 96A . <=' 9' D . . 1 ?' CA . 6< =' A @' I 166A?<=' C;<E' A' 6B ; 1@' ?6A;<(' EA=' = ;<E ' E1 C' A' . B6 1 B@<' 9' A; . =(' G; K<F0 16<=(' A @' . 161 A; ' @ ' 9' A66(>1 @=(' A=' E<66(A=' E1 C' A ' 1 . . < =<' . B6 10 B@<' 9' . < ' A @' C ;=<=' @<A@' ;' @ 1 ?' 1 ' C<' . 1@=' 9' C<' D6 @ = A1 <@' = EN' A @' EC< ' ' C<' . ; ; E' C<' @A ' D; >< ' C1=' G6A1 ' 9' @<A C(' 1 ' 61?C <@' BG' A' =W< <' 9' 1 F . GA;AD6<' C ; ; ;(' =BFC' A=' <I< ' . I<@' C<' = B(' 9' C<' I 1F ;' C1 . =<69

AG 6< ' GB;=B<@' C<' - B==1A =' A=' 9A;' A=' - o 1?=D<;?(' A @' D< @' C<' + ; <?<6N A9 <;' EC1FC' C<' ;< B; <@' ' AK#<' BG' C1=' E1 <;' JBA; <;=' D< @' C<' E<;' 1= B6A(' D< E<< ' 6D1 ?' A @' C . (' 1 ' ;@<;' ' F I<;' C<' 1<?<' 9' %A M1F(' EC1FC' C<' G;<==<@' 9 ;EA;@' E1 C' C< H . = ' I 1? B; ' ' C1=' 9' ; ;<==(' C<' . = ' 1 . G ; A ' D<6 ?' $@ @' >+C' ?>Ls0 #?' ' C<' + ; B==1A ' . A;FC (' EA=' D<=1<?<@' @B;1 ?' 9 B;'

C=(' A @' 1 ' =G1 <' 9' A66(C<' <99 ; =' . A@<' D ' (< 1 ?M< ' ' ;<61<I<' 1 ' B; ;< @<;<@' ' C<' C' A (' "2(' ' A;=CA(' <9<DI ;<(' EC . ' AG 0 6< ' F;<A <@' %B><' 9' %A M1F

B;>< ' EA=' A ' C1=' 1 . <' C<' =F< <' 9' =<;1 B=' <I< =' C<' ;< FC' A . DA==A@ ;' A ' = A 1 G6<(' 0< <;A(' <DA= 1A 1(' EA=' . A>1 ?' ?;<A ' <99 ; =' ' 1 @BF<' C<' B6 A ' < .' ' A66 ' C1 . =<69' E1 C' ;A F<(



EC< ' 9 ; ' C B=A @' B==1A =' =B@@< 6 ' F; ==<@' C<' % 1<= <;&' C<'
,B;>1=C' 9; 1<;&' B @<;' G;< < F<' 9' =<FB;1 ?' C<' <P<FB
1 ' 9' ;<A 1<=&' %B' ;<A66 ' Y C' C<' 1 < 1 ' 9' A==1= 1 ?
C<' <;I1A =' EC ' CA@' ;<I 6 <@' A A1 =' C<'+ ; <' C1=' =B@ '
@< '1 IA=1 ' 9' B;>< 'CA@' D<< 'F F<; <@' E1 C' C<& ?61=C
0 I<; . < &' EC 'G; G =<@' '=< @' 1 =' E '96<<' C; B?C' C<' = ;A1' 9' C<'
%A;@A <66<=' A @' EC< ' # <' B6 A ' ;@<;<@' C<' B==1A ' < I ' ' 6<AI<'
= A 1 G6<&' C<' ?61=C' A . DA==A@ ;' C;<A < <@' ' CAI<' CA ' F1 '
D G1DA;@<@' D ' C<' ?61=C' F96<<' 19' C1=' ;@<;' E<;<' ' ;<I ><@N A @' 19
5 C<' B1 A ' @1@& '1 . . <@1A <6 & ('=< @1 ?' AEA ' C<' ;< FC' A . DA==A@ ;&
A66 ' C11 =<69' E1 C' ?6A @' A @' +;B==1A' A?A1 =' ;A F<& C1=' C;<A
Y;< @<;<@' C<' B6 A ' <P ;< . <6 '1 @1? A & DB ' C<' C<=1 A <@' , ' 1 FB;' C<'
%&9< F<' 1' ' 6#;9<A < <@' G<;16& EC< ' <DA= 1A ' ;<I1I<@' C1=' F B;A?<' A @'
; <# ;< #CA . ' @1=G6A <@' 1 . . < =<' < <;? ' 1 ' A; . 1 ?' = A 1 G6<' E1 C
' DA=A@ ;& "2' 9 ; . 1@AD6<' DA <;1<=N = ' CA ' EC< & 1 ' A;FC& "2& C<'
?61=C' 96<< ' AGG<A;<@' D<9 ;<' = A 1 G6<& A' <;;1D6<' 91;<' F . G<66<@' 1 '
K' ;<GA=' C<' %A;@A <66<=' F =1@<;AD6 ' @A . A?<@' 5 ;A F<& <I<; C<6<==&
@<;1I<@' DB1' 61 6<' A@IA A?<' 9; .' C1=' =BFF<==' A @' C<' 9AI B;AD6<' @1=G '
=1 1 ' 9' C<' B6 A ' EA;@=' C<;& 9 ;' A' ;<I 6 ' 9' C<' SA 1==A;1<=' = ' A9 <;0
EA;@=' >' G6AF<' A ' = A 1 G6<& A @' <61 . ' EA=' @<G =<@' '
C<' EA;' F 1 B<@' 1 ' + 6A @' A @' A= <; '+;B==1A& EC<;<' C<' B==1A =&
B @<;' O< <;A6=' (< 1 ?M< ' A @' (A?;A 1 & ;< G< <@' C<' FA . GA1? '1 ' C<'
=G;1 ?' E1 C' C1; ' C B=A @' . < & A @' AG 6< & A9 <;' C<' 9A66' 9' % 9 M1F&
;<=B . <@' C<' 969< =1I<' <' ,A;FC<@' BG ' - o 1?=D<;?N C1='
A;FC' 9' ,C<&
;<' FC ?< <;A6='@<9<A <@' C<' < < . '1 ' C<' DA ,6<=' 9' OB@= A@' A @'
-o 1?=D<;?' # GA @< N A @' A ' <16=DB;?& ' C<' 66<& 61B' ' C P=A @'
;< FC' ; G=& F . . A @<@' D ' 'A 'A @' B6 & . A1 A1 <@' C<1;' G =1 1 '
A?A1 =' 1 < ' C B=A @' +;B==1A =' (< 1 ?M< ' CAI1 ?' ;< ;<A <@' 9 ;' C<'
GB;G =<' 9'F I<;1 ?' - o 1?=D<;?& AG 6< '9 E<@' C1 . & A @'& ' C<' ' C' 9'
'(A 6<' 9' ;1<@' A 1I<;=A; ' 9' A;< ? & C<' B==1A ' A; 1 & #<916<@
6A @&SB <& "2' KK ' ;1<@6A @' D;1@?<' I<;' C<' 66<' A @' 99<;<@' DA 6F '
AG 6< ' AFF<G <@' C<' FCA66< ?<& A @' A==1? <@' C1=' ?< <;A6=' A @' C1='
IA;1 B=' F ;G=' C<1;' =<I<;A6' G6AF<=' ' C<' ;1?C ' EA=' A;=CA6 # < & =BG0
G ; <@' D ' C<' FAIA6; ' B @<;' A B; ABD B;?N 1 ' 61?' F< ;<' A;=CA6&
A <=& A @' ' C<' 6<9 ' ; 1<;' A @' O; BFC 3=' FAIA6; ' C<' 1 . G<;1A6
? = @' A @' 1F ;3=' F ;G=' 9 ; . <@' C<' ;<=<;I<N C<' B==1A c' ;<= <@'
C<1;' '6<9 ' ' ;1<@6A @& A @' C<1;' ;1?C ' <P < @<@' 9A;' 1 ' C<' G6A1

AG 6< ; @<;<@ CA C< F1 =C B6@ D< A>< =1 F< 1 = FAG B;< E B6@ < AD6< C1 . F;B=C C< +;B==1A = D C 1 9; A @ 96A >A @ E B6@ =<FB;< C< I1F ; < 3 F ;G= C< ;1?C E1 ? EA= C< 91;= 1 . 1 A @ A9 <; CAI1 ? IA JB1=C<@ C< < < . 3 FAIA6; 1 9 66 E<@ C< ' +;B==1A = 1 ;1<@6A @ EC<;< 96A . <= A B F<@ C1= =BFF<== % A <= ; 1<; A @ 1F ; C< . A@< A I1? ; B= FCA;?<N A @ C< < < . A AF><@ D C< . 1 9; EA= < I<6 G<@ 1 = 6<9 D C<" I1F ;1 B= _ @1I1=1 9 A;=CA6 < 96<@ 1 @1= ;@<; A @ A . B6 1 B@< 9 +;B==1A ; G= @1 1I< 1 C< 66<G<;1=C<@ 1 1 = ;<A . C< +;B==1A A; . 6 = A ;1<@6A @ <1?C G1<F<= 9 FA A @ E< 91I< ;91 B=A @ . < >166<@ E B @<@ ;@; E <@ - o 1?=D<;?A9 <; C1= D6 @ DA 6< G< <@ 1 = ?A <= A @ C<; < . A1 <@ C1 ? . ; < 9 C< +;B==1A . A;FC AG 6< E . A;FC<@ EA;@= C< 1< . < 1 GB;=B1 9 C< - G==1A = A @ C< ! C 9 SB < FA . < BG E1 C C< . C< DA >= 9 CA ;1I<; EC1FC 96 E<@D< E<< C< E A; . 1<= (B C<; < C1= I1F ;1 B= . A;FC A . < A CA6 N 9 ; 6<PA @<; A JB1=C<@ A=><@ 9 ; G<AF<A @ <PG;<==<@ A @<=1; < =<< C1= F JB<; ; ; A9 EA= F = ;BF <@ <A; & 16=1 # C< 1<JK< 9 ; C< = 6< . 1 <; I1<E D< E<< C< MA; A @ C< 1G<; ; A @ C1= 1 <; I1<E >G6AF< 1 C< RYdYh =1?C 9 C< E A; . 1<= A==< . D6<@ C< ;1I<; 3 DA >= C< E = I<0 ;<1? = AGG; AFC<@ <AFC C<; E1 C . A;>= 9 . B BA6 <= << . A @ A?;<<@ ;<. A1 ?< C<; 9 ; = . < 1 . < A 16=1 9 ; C< GB;G = 9 @< <; . 1 1 ? CG CD DA=<= 9 A ;<A 9 GWAF< C< - 1 ? A @ LB<< 9 +;B==1A <;< ;<#BG= <@ A < @ DB AG 6< @1=G6A <@ DB 61 6< G1 9 ; C<1; C11=9 ; BC<= y C< ;< FC< . G<; ; < . G6 <@ <I<; <99 ; 1 @BF< C< B ? 6<PA @<; F 1 F1@< E1 C C1= I1<E=A <PF1 1 ? C1= A . D1 1 A @ 9A=F1 A 116? C1 . D C]' 1 96B< F< C1= E ? < 1B= A @ ?6 ; A= E<66 = D C< DA1 9 F<; A1 6 ? F I< <@ G; I1 F<= 6<PA @<; D<0 ?B16<@ =AF;191F<@ < <; C<; 1 <;<= C< @<=1; CA I< AG 6< . < @A =A F 1 C< A <PA 1 B==1A 9 1 6A @ A E<@1=C G; I1 F< A @ 9 6@AI1A A @ Q A66AFC1A G; I1 F<= 9 C< B;>1=C 5 . G1;< Y < DB 9<<D6 @<9< @<@ C< FAB=< 9 C1= B 9 ; B A < A66 - 1 ? ;<@<;1F> 1661A . A @ AG 6< EA= <P ;< . <6 CA;=61 JEA;@= C1= G;1 F< EC . - W ;<?A;@<@ A= C< G; I ><; 9 C< ;<F< =A ?B1 A; EA;

I >LB#@B+ 7@?@$G@C $+3B7 ; >$B+ B+ <M@ /<M B3 'D+@ >< $#A$< B3 <M@ 7@GB#< B3 3M@ '>+$AA>7$@A >+C <M@ C@LBA$<$B+ B3 M$A >##K D#<>+ @#$; >+C <M@+ <MBD M< M$; AH#3 >< #$J@7<K <B C$ALBA@ B3 >LB7<$B+ B3 <M@ L7BG$+?@A B3 <M@ ! @7 ; >+ @ ; L$7@F

CB=' 'D<' 9 ; . <@' B ' 9'+ ; B?A6' ' G; F6A . A 1 'A 1 . F<@' ' D<6 D %<F< . D<;(' "2(' CA ' C<' C B=<' 9' (;A?A MA' CA@' F<A=<@' ' ;<1? E< <1?C ' C B=A @' ;< FC' ; G=(' B @<;' C<' ;@<;=' 9' SB (' <;<' FÇA;99<@' E1 C' C<' <P<FB 1 ' 9' C1=' ;=< < F<' A @' D<9 ;<' C<1;' A; ;1IA6' A ' 1=D ' C<' +;1 F<' <?< ' 9 + ; B?A6' < . DA;><@' 9 ;' C<' (;AM16=(' ADA @ 1 ?' ' C<' 1 0 IA@1 ?' A; . ' C1=' FAG1 A6' A @' 96<<

C1=' ;AG1@' =BFF<==(' A @' C<' =FA @A6 B=' @1I1=1 =' 1 ' C<' GA 1=C' A6' 9A . 16 (' 1 96A . <@' AG 6< 3=' A . D1 1 (' A @' C<' AFFB= . <@' C1 . =<69' '6 >' BG ' C<' +< 1 =B6A' A=' C1=' F JB<= ' ' C< E<A>' CA;6<=' (' EC ' EA=' < 1;<6 ' B @<;' C<' 1 96B< F<' 9' 0 @ (' +;1 F<' 9'+<AF<(' C<' LB<< 3=' 9AI B;1 <(' CA@' ;< @<;<@' C1 . =<69'F 0 < . G 1D6<' 1 ' C<' < <=' 9'A66' C1=' =BDK<F =(' EC16= ' C1=' = (' <;@1 A @(' +;1 F<' 9' C<' = B;1A=(' CA@' D<F . <' C<1;' 1@ 6' D ' @<F6A;1 ?' C1 . =<69' C<' GG < ' 9' C<' @1 B=' 9AI B;1 <' AG 6< (' E' A ' C<' C<1?C ' 9' C1=' G; =G<;1 c' CA@' A6;<A@ ' AF <@' A=' C<' A;D1 <;' 9' C<1;' @199<;< F<=(' A;1@' C<' +;1 F<' 9' C<' = B;1A=' CA@' = 61F1 <@' C<' C B;' 9' A ' A661A F<' E1 C' C1=' 9A;;116 ' C<' . G<; ;' . 1?C ' CAI<' <P<;F1=<@' I<;' GA1 ' D ' GAF191F' . <A =' A' = I<;<1? ' 1 96B< F<(' A @' CAI<' B; <@' C<' CA ;<@' E1 C' EC1FC' C<' GA 1A;@=' ;<?A;@<@' C<' ?61=C' ' AFF B ' 9' B . <; B=' . A;1 1 . <' @1=A= <;=(' ' C<' G; 91 ' 9' C1=' = = < . ' (B ' C<' E@=C<@' . ;<N' A @' EC16= ' A66' C<' . < . D<;=' 9' 61<

7@+?M' @+<7K' A6' 9A . 16 ' <;<' 6 6#?' EA;@=' C1 . ' E1 C' C G<(' A' ;< FC' 1 ' GA.(+ +' B #S<;' B;A (O ;A @ @B><' 9' (<;?(' GA==<@' C<' + ;< <<=(' A @' C<' <E=' =G<<@16 ' ;<AFC<@' A@;1@' CA ' C<' 9 ; ;<==<=' 9' (A;F<0 6 A(' 1?B<;A=(' +A . G<6B A(' A @' A1 <DA= 1A (E<;<' 1 ' C<' CA @=' 9' C<' ;< FC' . . <@1A <6 ' A9 <;EA;@=' AG 6< (9 ;?< 1 ?' C<' ;<A ' 9' A1 <D6<AB(' @< . A @<@' C<' =B;;< @<;' ' C<' ;< F61' < . G1;<' 9' C<' G; I1 F<=' ' C<' 6<9 ' DA >' 9' C<' D; ' CA;6<=' ' A @' C<' LB<< ' E<;<' = ;BF>' E1 C' F = <; A 1 ' O @ ' A@I1=<@' C< . ' ' 9 66 E' C<' <PA . G6<' 9' C<" +;1 F<' <?< ' 9'+ ; B?A6(A @' ' ? ' ' C<1;' G ==<==1 C=' 1 ' . <;1FA6' C< ' A?;<<@N' A @' <I<; ' G;<GA;A 1 ' CA@' D<< ' . A@<' 9 ;' C<1;' @<GA; B;<(EC< ' <;@1 A @' GG =<@' 1 =' <P<FB 1 (A @' FA661 ?' k1<

BLD#>7'$>AD7E' 7>+Y+@$' G GB6A 1 ' 9' ;A KB<M' ' A; . =(@< B F<@' C<' A@I1F< ?1I< ' D ' O @ 'A=' A' 9;<=C' ;<AFC<; ' ' 1 =B;;<F 1 ' > G6AF<(C<' ; G=' >' GA; '1 '1 (A @' <;@1 A @' G6AF<@' C1 . 0 =<69'A '1 =' C<A@' <' A; ;<= <@' O @ (. A@<' C1=' 9A C<;' G;1= <;(A @' 9 ;*<@' C1 . ' 'AD@1FA <(A @' C<' . A@<' A' ;1B . GCA6' < ; '1 ' A@;1@' A=' -1 ?

9 GA1 ' (1B ' ' C< 9 66 E1 ?' @A 8 ;@ A;FC B T E1 C B ' E@ 1 ? 9 ;' C< . G<; ;3 ;@<;= < <;<@ CA 'FAG1 A6 E1 C C1 =A; . ' CA;6<= G; <= <@ A?A1 = ' C1= 9 ;F<@ AD@1FA 1 A @ B;A ';<9B=<@ ' ;<F ? 1=< <;@1 A @ A= - 1 ?' AG 6< 'A6 <=C B6@ @<F1@< D< E<< ' C< . ' C< . G<; ;' E< ' ' SA <EC<;< C< 1 I1 <@ 6r ?' CA;6<= A @'C1= = B ' . << ' C1 . 1 ' ;@<;' 61A ' A= =BG;< . < A;D1 <;' DJ9EF] C< . 1?C ' @<F1@< BG ' C<1;' @199<;< F<= A @ C<1;' @<= 1 1<= MSA' = A@$V@A <M@' L>+$AM 1 61< ' C< 'CA@' A;;1I<@ AG 6< . A= <;' 9 C<1;' G<;= = @<F1@<@' 1 ' 9AI B;' 9 C< - 1 ?1 9 ;F<@ <;@1 A @ ' ;< ' 1 . F< C< C; < A @ ;<= ;< C< F; E ' 'C1= 9A C<; A @ C< ' D A1 <@ 1 ' 9; .' C< 6A <;' 9 ;' C1 . =<69 ' CA;6<= ' EA= =< ' ' 61I< A ' . ' G1 ? <A @ C1= = ' EA= @< A1 <@' A G;1= <;' 1 ' C< CT <AB 9 A6< ZA '' CB= EA= F =B . . A <@ D ' . <A = 9 A G1<F< 9 G<;91@ A ' @1 B= AF ' 9 =B;GA 1 C< ;<=B6 = 9 EC1FC E<;< 9A A6 ' 1 = AB C ;A @ = ;BF> C< 91;= 'D6 E A 'C1= G; =G<;1 ' ' C< . <A 1 . < B;A ' >< G ' G ==<==1 ' 9 A@;1@ A @ C< B F16 9 A= 16<A B @<;' C< G;<==B;< 9 ;< FC 1 0 96B< F<A ;<JB<= <@ CA 'S =<GC AG 6< 3= <6@<= 'D; C<;A E B6@' D<F . < - 1 ?' 9 GA1

' A==< . D6 ' 9 GA 1=C AD6<= EA= 1 . . <@1A <6 ' F I ><@ A ' - A B<A EC<;< C< . G<; ;' ;?A 1M<@ A SB A ' FA;; ' ' A G; I1=1 A6 ? I<; . < ' S =<GC ?AI< BG ' S AFC1 . ' B;A ' C< F; E ' ' 9 AGG1<= A @ 1 . . <@1A <6 ' JB1 1 ?' CA ' FAG1 A6 ;<AFC<@ GA; < D# . <A $+ 'B3' L>$+ (A , < ' C< 2 C 9 SB <EC< ' C< EA= @<F6A;<@ -1 GJ 9 A @ B;A ' -1 ? 0 Z B3' >L#@A' , GA1 ' D ' C< %B>< 9 9A A@ A @ A @<GB A 1 ' 9 ?;A 0 @<<= A @ IA;1 B= = A < D @1<= ' C< ==< . D6 ' A ' (A < I <@ A F 0 = 1 B 1 EC1FC S =<GC =E ;< ' D=<; I<A @ ' C< ! C 9 S1@ ' C< I;A= 'C1= EA ' ' GA1 ' (B 'A6;<A@ ' C< GA 1A;@#1 @1? A 'A @ 9B13 B= 61A@ 96 E ' 'A; . =' C< F6<;? '6<@ C< ;<I 6 @<F6A;1 ?' CA ' <AI< ' =<69 IA= 1 <;<= <@ 1 ' C< FAB=< 9 <;@1 A @ A @ @< B F1 ?' AG 6< ' = 1FC;1= 'N C< EC 6< A13 . 'K 1 <@ 1 A @ A G; I1=1 A6 ? I<; . < ' A==< . D6<@ A ' <I166< A B66<@ A66 C< AF = 9 C< SB A A ' (A < ' A1 ' <;@1 A @3= @A 'A <E 1F161A ' I<=G<;= = B @<@ A?A1 = ' C< ;< FC 61; B?C B ' GA1 ' C<1;' =JBA@; ' A ' A@1M G9 . 'D<;@B _ IA= =<1M<@ A @ 1 = =A16 ;= =6A1 ' C< GA 1A;@= =1? A61M<@ C<1;' I< ?<A F<1 ' . A 'G6AF<= D ' . A==AF;<= A @ A ; F1 1<= @<F6A;1 ?' IA; ' C< @<A C A?A1 = ' C< ;< FC N A @ C< + ; B?B<=< 9 66 I<@ C<1;' PA . G6<' ' C< . <A 1 . < (<==1];<= IA= I1F ;1 B= A '' <@1 A' @< 1

<FF A @ C1= I1F ; G< <@ 61 ?A <= 9 A@;1@ - 1 ? S =<GC EC . A@< C1= < ;A F< 1 CA FAG1 A6 C< " C 9 SB6 (11 1 . 1 @1A <6 A9 <;EA;@= 0< <;A6 %BG . A@< A @1=?;AF<9B6 >L$<D#><$B+'B3 ! @+@7># DLB+< FAG1 B6A 1 A (A 6 A @ =B;;< @<;<@ E1 C E< =1P C B=A @ ; G= C1= <;;1D6< FC<F> =C > C< G E<; 9 C< ;< FC 1 C< +< 1 =B6A A @ ;<A 1 . A <@ C< GA 1A;@=C< ;<=B6 D<1 ? 61A S =<GC CA@ JB1 A@;1@ <1?C @A = A9 <; C< CA@ < <;<@ 1 1 = 6< . = A <

+ ; B?A6 A6= ; =<C A @ A ?61=C A; . @1=< . DA;><@ C<;< 1 . @<; C<C ;@<;= 9 1; ; CB; <66<=6< A9 <;EA;@= ;@ <661 ? $>$+ 'B3 B7<D1 >#' "'>+C$+ 'B3 >+ + #$>M>7 ; K S1B1 E1 C <r C B=A @ . < 6 I< B;<@ 9119C C< DA 6< 9 1 1<1;A A?A1 = E< =1P C B=A @ ?61=C A@@ + 13 B?B<=< <EA= IA JB1=61<@ A @ = A9 <; =1? <@ C] FAG1 B >L$<D$><$B+'B3 1 ;A EC1FC A 6<A= A66 E<@ C1 . <;< ;<A RD B<>< $+<7> ;A F< QE1 C C B; + ; B?A6 EA= E <IAFBA <@ D C< ;< FC S =<GC3= 6 G ==<==1 =1 GA1 E<;< (A;F<6 A IA;;< A @ (1=FA A @ C< ?61=C EC CA@ 6A <6 D<< C< GA 1A;@=3 < < . E<;< I ;<F<1I<@ D C< . E1 C G< A; . = AG 6< FCA9<@ EC< C< 6<A; C< ;<I<;=<= =B99<;<@ D C1= A; . = 1 C< +< 1 =B6A A @ <PK1<;1< F<@ A 9<<61 ? 9 . 1 ?6<@ ?;1<9A @ ;A?< A C1= 91;= A99; =B99<;<@ D C1= <A?6<= < ;<= 6I<@ CA C1= D<= ?< <;A6= A @ C1= 0<; . A A @ A61A A; . 1<= =C B6@ F; == C< + ;< <<= <99AF< 61< @1=?1 AF< =B99<;<@ A (A 6< A @ = 196< A 1 = D1; C A 1 =1 . ;<F 1 = C;<A < 1 ? A @ 1 . < : G<F <@ < ;<FA66<@ C< . 9; . C< DA >= 9 C< 1< . < C< G;<<C 6D<A @ C< %A BD<A @ 1 A G; F6A . A 1 A@@;<==<@ C1= EA;;1 ;= B <;<@ 611= F; 9 EA;A @ I< ?<A F<), [6@1<;= Z CA I< <<@ 9 B < B= FA;; B; <A?6<= 1 ;1B . GC C< F 6 . B= 9 <;FB6<=C 9 ;E< CA I< 1 =B6 = AI< ?< C<;< B CA I< =B;GA==<@ C ;< E 9 . @<; A; . 1<= N DB CA I< B <JBA66<@ C< A; . 1<= 9 . <C EC1FC 1 A =1 ?6< FA . GA1? ;1B . GC<@ 61< C1 < A @ 61< BGC;A <=C 1 66 ;1A A @ C< A?B= 6 ?G<AF<C A @B;AD6< G; =G<;1 E 6 D C< 9;B1 9 B; 16= ;B< ;< FC . A =C B6@ C FA A><; <G =< 1 . 16 C< =<A= A;< G< A @ 9;<< 6@1<;=Z A66 CA B CA I< @ <C A66 CA B =CA66 < @ 9 ;C< ;< FC G< G6< A @ 9 ; . ?6 ; C E166 D< < <; A66 ;<A=B;<@ 1 . C<A; `

6 C B?C 6 ?< <;A6 1 <;<= = E<;< ;<9<;;<@ 1 C<=< G; B@ E ;@= A= C< = 6< DK<F 9 C< EA;C 1 EA= <I1@< CA 1 CA@ A C<;FAB=<C

C70# T ' + - ' : .

A @ 61A ' EA=' G<;= A6 A . D1 1 ' 9 AG 6< 1 ' 9AF DA@ 6b# @<=1;<@ ' F6 =< GA1 ' A?A1 = ' ?61=61 F . . <;F< D< F B6@ DAI< <99<F <@ CA ' DK<F ' D ' A66 E1 ? <;@1 A @ ';<1? ' B @<;' D1=' 1 96B< F< ;' D ' = ;< ? D ' < 1 ? C< =F<G ;< 1 ' C< DA @=' 9 CA;6<=' ' (' @<=G 161 ? D C C< < A @ @1< C<; D< A; B=<@ A?A1 = ' C1 . =<69 C< A;@< ' GA==1 =' 9 A ' < CB=1A= 1F G< G6< A @ ;<I1I<@ C< A D =1 ' 9 61< B; G<A ' FAD1] = I611FC E<;< E1 C ? @ ;<A= ' A6A; . <@ A ' = ' B <PG<F <@ A ' B=B;GA 1 A @ =AE '61 . 1 ' ' C1=' 1 IA=1 =' AG 6< ' < <;<@ A ' CAMA;@ BG ' A D 1B1@ ' 6<==' GA C EC<;< C< 6 = ' C1 . =<61 A @ < F B <;<@ A G;<F1G1F< ' 1 ;<A@ A ' C< G C1 ' 9 C1=' C1= ; ' A ' EC1FC E< CA I< E A; ;1I<@ &C1=' = A;' D<?A ' ' GA6< A @ C< G;<= 1?< 9 C< 1 I1 F1D161 ' 9 C1=' A; . =' EA=' @<= ; <@

8*"

' E9' ' 3$B ' ' '

+ '

/ ! ' ' 8! / >8 ' ' /" ' !' -! ! ' 0 8 ! ' '

/ ! "

"

+ ' D<1 ?' ;<= 6I<@' ' =BD@B<' GA1 (' F 91; . <@' A ' ;9B; ' 1 ' <G0

< . D<;' A @' F D<;(' " (' D1=' A661A F<' E1 C' 6<PA @<;(' A @'

9 H' # ' C<' E ' < . G<; ;=' AGG<A;<@' A ' C1=' F<6<D;A <@' 1 <; I1<E' = '

F < ' ' 7 ' ?

E . 7 ' ?

C% ' + 7 . BFC' C<' . ;<' 1 F61 <@' ' F . <' ' A' ? @' B @<;= A @1 ?(

D<FAB=<' C< ' E1=C<@' ' D A1 ' 9; .' <AFC' G C<;' A' . B BA6' ?BA;A <<' 9G;'

61<1;' ;<F< ' B=B;GA 1 =(' EC1FC' CA@' D<< ' DB ' 1 . GA 1< 6 ' D ; <' D ' C<

;<=' 9' B; G<' C<' B==1A ' ; G=' CA@' A><' G ==<==1 ' 9' 1 6A @' 1 '

C<' ; C(' A @' 1 ' C<' B C' CA@' 1 IA@<@' C<' G; I1 F<=' 9' 6@AI1A' A @'

A%AFC1A(' EC16=' C<' ;< FC' ; G=' 1 IA@<@' GA1 ' C<' I ' = I<13<1? =

=1? <@' A' ;<A ' D ' EC1FC' AG 6< ' ;<F ? 1=<@' C<' C;<<' G; I1 F<='

1 IA@<@' D ' B==1A' A=' A ' 1 <?;A6' G ; 1 ' 9' CA ' < . G1;<N' A @' 6<PA @<;(' 1 ' ;< B; (;<F ? 1=<@' C<' AG 6< 1F' @ A= ' 1 ' GA1 (' A @(' 1 ' FA=<

;A F<' =C B6@' D<' A ' EA;' E1 C' B= ;1A(' < ?A?<@' (' A==1=' C<;' A?A1 =' C<

6A <;' G E<; ' C1=' ;<A (' EC1FC' EA=' @;A#I ' BG' E1 C B ' A ' ;<?A;@' '

G1 ;A6' G;1 F1G6<=(' EA=' 6 ' 9 B @<@' ' C<' A . D1 1 ' 9' C<' . A;FC=' EC '

=1? <@' 1 (' A @' A B;A66 ' F B6@' 6 ' 6A=' A=' 6 ?' A=' C =<' 1 <;<= =' =C B6@' D<

1@< 1FA6 ' C1=' D<1 ?' C<' FA=<(' 1 ' EA=' A6 . = ' 1 . G ==1D6<' CA ' 1 ' F B6@' D<

9' 6 ?' @B;A 1 ' <1K<; C<6<==(' D<1 ?' =A 1=91<@' CA ' 6<PA @<;3=' 1 < 0

1 =' E<;<' GAF191F(' AG 6< 'K 1 <@' C1=' 6<?1 =' 1 ' GA1

+A6A9 P(' A= A\ =(' A @' (6A><' F . . A @<@' C<' < < . 3=' A; . (' EC1FC'

F =1= <@' 9' A' CB @;<@' A @' <1?C ' C B=A @' . < (' A @' <P < @<@' 9; .' C<

MBS+7$+' L>$+' F A=' 9' (1=FA' ' A;A? ==A' DB ' AG 6< ' . A;FC<@' FF 1

;=' (BFF<=<(' GA 1<@' D ' C1=' ?;<A ' FAG A1 =' A @' A ' C<' C<A@' 9' C1=' I< <;A =(

A @' I1F ; (C<;<9 ;<(' EA=' F<; A1 ' B6 ' D 1 <@' A' I1<

8* # " ' ' " ' : 5/)' ' '

9;<' C<1;' F B ; ' C' ;< FC' Q ; G='1 ' C<=<' F B ;1<=' @1@' '
A . B ' A ' C1=' 1 . <' ' . ;<' CA ' A' CB @;<@' A @' C1; 'R C BGA @' '
. < ' EC ' E<;<' @1=G<;=<@' 9; . ' C<' (A6 1F' D' C<' (ACBD<' B @<;' C<' F . 0
. A @' 9'(< . A@ <' %A I B=' A @' B@1 ' B?< <' FFBG1<@' +1<@ . ' '_
A @' A6 ' E1 C' A' 9<; ' @1I1=1 ='

' C<'91;=';B . B;' 9' 61<'1 < 1 ' 9' B= ;1A' A @' C<' . I< . < ' 9'C<;'
A; . 1<=' AG 6< ' JB1 <@' GA1 ' 9 ;' +A;1=' 9; . ' EC< F<' C<' @1;<F <@' C<'
AF 1F=' 9' C1=' B . <; B=' ; G='1 ' A6 'A @' 0<; . A ' C<' IA=' C<A ;<'
5 9' C1=' G<;A 1 =' <P < @<@' 9; . ' + 6A @' EC<;<' + 1A E=> ' EA=' 1 #
F . . A @' ' A6 ' EC<;<' B?< <' EA=' A ' C<' C<A@' 9' =1P ' C B=A @'
; G=' AG 6< ' JB1 <@' +A;1=' ' C<' 6 C' 9' G;16' A @' EA=' ' C<'
%A BD<' ' C<' 2 CN' DB ' C1=' ;@<;=' 9 ;' C<' F F< ;A 1 ' 9' C1=' ; G='
CAI1 ?' D<< ' . 1=B @<;= @' D ' (<; C1<;' C<' AK ; 0< <;A6' C< ' CA@' '
D<< ' <P<FB <@' C<' . G<; ;' 'A;;1I1 ?' 9 B @' C1=' A; . ' @1I1@<@' 1 '
. A ' . A==<=' C<' E ' G;1 F1GA6' 9' E611FC' E<;<' C9; ' 6<A?B<=' 9; . ' <AFC'
A.GA1?' 9' + ' ' C<;' C<' 91;=' B @<;' %AI B=' D<1 ?' A ' - A 1=D <' A @'
$+ * @++>+K ' =<F @' 1 . @<;' A==< A' A ' B?=DB;?' ' A' F< ;A6
G 1 'D< 1I<< ' C<=<' E ' A; . 1<=' E<;<' C<' A661<=' 9' ;A F<' 61F' (AIA;1A ='
C<' 6 B; < . D<;?' ; G=' A @' C<' ;<=' 9' C<' A; . ' 9' 61<' 9<@<;A 1 ' 9'
C<' 611 <' (B ' 61<=<' ABP161A; ' ; G=' E<;<'= . A66'1 ' B . D<;' A @'1 FAGAD6<
% 9' ;<=1= 1 ?' C<' =C F>' 9' C<' < < . ' 1IC ' EA=' G;<GA;1 ?' ' A AF>' 6P< 1'
I=' = ' A=' C<' =C B6@' CAI<' @<916<@' D ' A @= A@ ' ' C<' ;1?C ' 9' C<'
%A BD<' C<'1 < 1 ' 9' C<' ;FC@B><' EA=' ' 9 ;F<' @1<' F< 9;<' 9' C<'
;< FC' A; . ' D ' GA==1 ?' D< E<< ' C<' F ;G=' 9' %AI B=' A @' A==< A'
AG 6< ' =AE' C<' G<;16' A @' @1=G6A <@' A66' C<' ;<= B;F<=' 9' C1=' ?< 1B='
61<' >' A@IA A?<' 9' C<' C<=1 A 1 ' =C E ' D ' C<' < < . ' ' C1=' A; ;1IA6'
A @' ><G ' C1 . ' 9 ;' E ' @A =' A6 . =' . 1 6<==' F F<A61 ?' 9; . ' C1 . ' C<'
E<A> <==' 9' C<' 9 ;F<=' A ' C1=' @1=G =A6'1 ' C<' F< ;<' 1 '9; ' 9' 611 . ' '
;@<;<@' %AI B=' A @' A==< A' ' AGG; AFC' <AFC' C<;' A=' 9A=' A=' G ==1D6<'
A @' 'K 1 ' C<' A; . ' 9' C<' 9<@<;A 1 '1 ' C<'< I1; =' 9' <B= A@ ' = 'A='
' C;<A < ' C<'9; 'A @'6<9 '96A >' 9' C<' ;FC@B><' CA;6<=' 1IC ' A= 1=C<@'
A ' C<=<' ;AG1@' A @' =>169B6' . A . 1 <=' @A;<@' ';1=>' A' 9 ;EA;@' . I< . < '
A @' . A;FC<@' EA;@=' C<' ;1?C ' DA >' 9' C<' %A BD<' 1 ' C<' @1;<F 1 ' 9'
- A 1=D <' EC1FC' %AI B=' EA=' JB1 1 ?' A @' 9' EC1FC' C<' < < . ' >'
G ==<==1 ' 1F ;1 B=' A ' C<' DA 6<' 9' CA ' %AI B=' <99<F <@' A' KB F0
1 ' E1 C' C<' F< ;<' A @' ' C<' ! C' 9' G;16' AG 6< ' =AE' C<' EC 6<

9 611= ; . ' F F< ;A FF6 B @< '611= A @' C< 9 B;' 9 66 E1 ?' @A = E<;< . A;><@ 9 B;' 9;<=C I 1F <=)' Y& ' S1 ' DA 6< 9 D< =D<;? C< . G<; ; ' D; >< Y C ' ;FC@B><= 61 < A ' A 07 A=CB & > D<;? @ACB & G ==<==1 ' 9 C1= DA=< 9 G<;A 1 =& ; B <@ C1= 6<16;& A @ > 1 = A; 166<; 'A @ . A?AM1 <= NY A ' F> . B616& ' C< B@ 9 G;16& C< IA JB1=C<@ C< EC 6< 9 C< < < . 3= A; . & A @ @; I< 1 ' DAF> D< E<< C< =<;' A @ C< %A BD<' C< B= 1@A = <=FAG<@ D ' A 1=D <& EC1FC AG 6< ' > ' C< 9 66 E1 ?' @A ' A9 <;' A D6 @ 'DA 6<& 1 IC1FC C< ;<F<1I<@ A =61?C ' E B @ ' C< C<<6 ' +;1 F< CA;6<= ;< ;<A <@ BG ' C< 9; 1<;' 9 (C< . 1A& A @ C< ;< FC . A;FC<@ BG ' 1< A

< @A & @B;1 ?' C1= ;AG1@ . A;FC& IC16=' AG 6< ' EA= 1@>1 ?' E1 C A]= A @ (<; C1<;& A' ?B1@< G 1 <@ B ' '@1< . ' C< A= 6< 9%1;= 1 . & 1 ' E611FC - 1FCA;@ B; @< 1 ' CA@ D<< ' 1 . G;1= <@ ' C1= ;< B; ' 9; .' C< 6 ' A @' C< . G<; ;' CA6 <@& 1 . @ A9 <;' CA I1 ?' ?AM<@ 9 ;' = . < 1 . < A ' C<=<' F<6<D;A <@ ;B1 =& =A1@& A= C< F 1 B<@ ' C1= EA & * < A6= ' . A@< EA;' 1 ' +A6<= 1 < A @ ;1A' C< EA= . ;< 9 ; B A < CA ' E< <;< A ' A1 ' S<A ' @3 F;<& DB ' ' . ;< IA61A ' CA ' B& . ' D;AI< A <=' < IA JB1=C<@ C< D;AI< A6A@1 & A @ < ' C< CA@ =FA;F<6 ' BF61<@ C< =C ;<= 9 B; G< D<9 ;< C< 9<66 1 ' C< CA @= 9 C =< EC ' <;< 611 ?' 1 ' F . GA;1= ' ' C1 . ' ' < EA= = 6@ D ' A' @B>< 9 B= ;1A' ' A ' . G<; ;' 9 O<; . A ' ' ' ' C< 6A= ' 9 C1= F B; 1<;=& (6 @<6& A6 < ;< . A1 <@ 9 11 C9B6 '611 . & DB ' C1= A 1 ' . A@< . A ' =AF;191F<= ' <99<F ' C1= @<61I<;A F< `Y AG 6< ' F< . ;< B; <@ C1= < <= 1IA;@= C =< F<6<D;A <@ ;B1 =& A @& ;<9<;;1 ?' ' C< ?< <; B= F B;=< C< CA@ GB;=B<@ EA;@= C< >1 ?= EC .' C< CA@ F JB<;<@& =A1@ CA ' A' = I< ' '<1? ' 1 ' . @< . ' 1 . <= E 1@@ <=FAG< C< 9A < EC1FC CA@ D<9A66< ' 1FCA;@ Y {@ C< ' 9<66 =B@@< 6 ' 1 ' A' @<<G A @ . <6A FC 6 ' =16< F< ' <96<F 1 ?& G<;FCA F<& ' C< CA ;<@ 9 C1= < < . 1<=& C< 1 ' C1= E ' . 1 @ A 1F1GA <@ CA ' EC1FC AF BA66 ' >G6AF< ' <CA@ A' G;<=< 1 . < & G<;CAG=& CA ' 61A ' 611FC CA@ D<9A66< ' 1FCA;@ E B6@ = . < @A ' D<9A66 C1 . =<69& A @ CA ' C<;< 1I B6@ D< ' <E (6 @<6 ' ;<6<A=< C1 . ' (B ' =BFC A' 1 . < EA= < ' 9A;' 99& A @ D<9 ;< 1 ' =C B6@ A; ;1I< 9;<=C ;1B . GC= AEA1 <@ C1 . ' ' C< 8 C A & A' . C A9 <;' C< F . . < F< . < ' 9 C< D;1661A ' FA . GA1?

G6AF<@' 1 ' A' G =1 1 ' 9' @1991FB6 ' D ' C1=' I1F ; (' =1 F<' 1 ' CA@' 6<@' C1 .' ' 9A;' AC@' =<GA;A <@' C1 . ' 9; .' C<' DB6>' 9' C1=' A; . ' <' CA6 <@' A @' ;@<;<@' A' ;< ;<A (' BG ' EC1FC' C<' B= ;1A =' ;A6C<@' A @' ;< B; <@' A?A1 =' C<' ;< FC' 1 ' 9 ; . 1@AD6<' . A==<=(' E1 C' C<' 1 < 1 ' 9' =B;; B @1 ?' C< 6A <;' A @' @;1I1 ?' C< . ' 1 ' C<' ;1I<;' (B ' C<' F . . B 1FA 1 =' 9' C< ;< FC' E1 C' C<' 1=6<' 9' DAB' CA@' ' D<< ' FB ' 99(' A @' 1 ' EA=' ' C1=' 1=6A @' CA ' AG 6< ' E' 6<@' DAF>' C1=' ; G=' <' =AE' C B=A @=' 9' C1=' I< <;A =' 9A66' A; B @' C1 . 'N C<' 6 = ' C<' C<; 1F' @3 =GA? <(' C<' D;A I<' A1 ' 16A1;<(' A @' A <=(' EC ' CA@' D C' 6<?=' F;B=C<@' D ' A' FA ' DA66(' A @' <PG1;<@' 1 ' C1=' A; . =' ' C<' . <A 1 . <' A==< A(' 91; . ' A=' A' ; F>(' G;<=< <@' A ' B @AB <@' 9;o ' ' C<' ;FC@B><(' C<6@' C1 . ' 1 ' FC<F>(' A @' F I<;<@' C1=' G<;16 B=' ;< ;<A ' AG 6< (' A @' A66' C<' F ;G=' EC1FC' CA@' F; ==<@' 61<' = ;<A . (' ;< < <;<@' C<' 1=6A @' 9' DAB(' A @' 1 ' D<FA . <' C<' ;< FC' C<A@ JBA; <;= B?< <(' EC ' EA=' . . A @<; 1 C1<9' 9' C<' A; . ' 9' A6 (' EA=' A' C1=" 1 . <' . A;FC1 ?' A ' 1 =',C<A@' ' K 1 ' AG 6<; ' ' C< %A BD<' AF@ A6@(' O ;< 1<;'A @' (A;A?BA' @3 1661<;=(' E<;<' A;FC' 9' C< C1=' F . GA 1 =' 1 '?6 ; (' A @' C1=' A; . ' CA@' ' 6 ' D<< ' I1F ;1 B=' A ' C<' DA 6<=' 9' +1AI<(' A;E1 M(' A @' O ;1 M(' DB ' CA@' @;1I< ' D<9 ;<' 1 ' 1 ' C<=<' I A;1 B=' < F B <;=' <1?C ' C B=A @' B= ;1A =(' B @<;' C<' ;FC@B6F<' S C (' EC .' 1 ' 'G;<I< <@' 9; .' <99<F 1 ?' A'KB F 1 ' I1 C' C< A; . ' 9' +;1 F<' CA;6<=' @' 91 A66 (' ' C<' C' SB <(' 61<' A 1I<;=A; ' 9' CW' DA 6<=' 9' A;< ? ' A @' ;1<@6A @(' 1 ' =BFF<<@<@' 1 ' . JB1=C1 ?' C< . ' A ' 61<' DA 6<' 9' - AAD(' >' C<' 9 ; ;<=' 9' CA ' A . < A @' 1 1 <@' C<' . G<; ;' 1 ' C<' 1=6A @' 9' DAB ' C1=' A; ' 9' B<@H I1F ; ' < AD6<@' AG 6< ' ' ;<=B . <' C<' 99< =1I<

9 <;' 9 ; ' @A =36AD B;(' C;<<' 1 . . < =<' D;1@?<=' =GA <@' C<' %A BD<' A @' B 1 <@' C<' 1=6A @=(' ' EC1FC' C<' . G<; ;' CA@' ?1I< ' C<' A . <=' 9' AB <=(' @3 =GA? <(' A @' A1 16A1;<(' EC ' CA@' D<< ' >166<@' A ' == ?(' A @' G< <@' A' GA==A?<' 9 ;' 919 ' C B=A @' ; G=' A @' 91I<' CB @;<@' G1<F<=' 9' FA ' C<' A; . ' F; ==<@' C<' ;1I<;' ' A' = ; . ' 1?C (' ' C<' C' SB6 (' <PG =<@' ' A' <;;191F' FA A@<(' A @' ' C<' 9 66 E1 ?' @A ' EA=' 1 ' DA 6<' A;;A ' ' C<' < < . 3=' 6<9 (' A @' FA;;1<@' C<' 9 ; . 1@AD6<' < ;< FC . < =' EC1FC' CA@' D<< ' <;<F <@' GG =1 <' C<' 1=6A @(' D< E<< ' D<;=@ ;9(==61 ?(' A @' =G<; (' ' IA=' G6A1 ' <P < @<@' D< @' C<=<' G =1 1 =' 1 ' 9; ' 9' C<' ;< FC' A; . N' C<' C1 =' EC1FC' =B;; B @' 1 ' ' C<' E<=' A @' C<' <A=' <;<' 1 ' G ==<==1 ' 9' C<' B= ;1A ' A; . (' EC1FC' @<9< @<@' A' 9 ; . 1@AD6<' G =1 1 ' ' C<'6<9 ' DA >' 9' C<' B==DAFC' A?;A . ' 1IA=' 1 ' C<' F< ;<' 9

8** ' ' ! /' . ' : !>' ' 8* -'

61<' < < . 3=' A; . ' ' 61<' 91;=' @A ' 9' C<' DA 6<' %AI 11= (' A . A;JB<(' A @' B@1 (' . A@<' A' 9;B1 6<==' A AF>' ' C<' C<1?C =' 1 ' C<' FF16GA 1 ' 9' C<' < < . ' C<' B' ' A; . 1<=' < FA . G<@' ' C<' 91<6@(' A @' ' C<' . 1 E' C<' @<= 1 1<=' 9' B; G<' E<;<' ' D<' @<F1@<@' C<;<

' C<' D;<A>' 9' @A ' C;<<' CB @;<@' C B=A @' . < ' E<;<' 9AF<' ' 9AF<' ' A' 61 <' 9'= . <' C;<<' 6<A?B<=' 1 ' <P < ' AG 6< ' ?A66 G<@' 61; B?C' C<' ;A >=' 9' C1=' DA A61 =(' A @' G 1 <@' B ' ' C< . ' C<' C166=' 9' A?;A . ' A @' C<' +<$B' 9' E<;' 9' <B=1<@<6' ' C<' = <<G' DA >=' 9' C<' B==DAFC '

= > $> ; $ ' 1 ' CA ' @1;<F 1 ' CA ' EA=' C<' FC1<9' @A ?<;(' A @' 1 ' EA= C<;<' CA ' C<' DA 6<' EA=' ' D<' @<F1@<@' 4%AI B= ' A @' B@1 ' ' C<' ;1?C ' E<;<' ;@<;<@' ' FA; ; ' C<=<' G =1 1 =' B?< <' A @' C<' A; . ' 9' A6 (' (< . A@ <' A @' C<' AP =' E<;<' 1 ' C<' F< ;<(' A @' A==< A' EA=' 1 ' F . . A @' 9' C<' 6<9 (' EA;@=' C<' %A BD<' 3' C<' ;FC@B><3=' ;1?C (' G;<F<@<@' D ' =1P ' G1<F<=' 9' A; 166<; (' A@IA F<@' A?A1 = ' C<' ;<A;' 9' C<' ;< FC' A; . (' A @' C<' AP =' 1 . @<;' (< . A@ <' E<;<' GB ' ' 961?C ' AG 6< ' ;@<;<@' A' FCA ?<' 9; .' C<' 9; ' ' C<' '6<9 (' A @' 6AB FC<@' A?A1 = ' C<' < < . 3=' F 6B . ' C<' @1I1=1 =' 9' A==< A(' AF@ A6@(' A @' C<' FAIA6; ' 9' C<' . G<;1A6' 0BA;@(' B @<;' C<' IA61A ' (<==1F;<=' (B ' 61<=<' ; G=(' =BGG ; <@' D ' C<' 91;<' 9' A' CB @;<@' FA (' E<;<' B AD6<' FC<F>' C<' A@IA F<' 9' C<' < < . 3=' F 6B . (' A @' A ' A1@< @< FA . G' 1 9 ; . <@' AG 6< ' CA ' C<' < < . ' EA=' A6;<A@ ' 1 ' C<' ;<A;' 9' C1=' A; . ' C<' 6A <;(' C E<I<;(' ;< . A1 <@' B . I<@(' A @' ><G ' C1=' <A?6<' ?6A F<' B; <@' EA;@=' C<' ;1?C (' 1 ' C<' @1;<F 1 ' 9' C<' C<1?C =' 9' B==DAFC ' 66' A ' F<' C<' 91;1 ?' 9' %AI B= 3=' ; G=(' 1 ' 9; ' 9' C<' E<;' 9' <B=1<@<6(' A B F<@' C<' =BFF<==' 9' C1=' ;1?C ' E1 ?(' A @' C<' @A ?<; B=' G =1 1 ' ' C<' < < . ' [' 0 ' A=' 9A= ' A=' G ==1D6<(`' =A1@' AG 6< ' ' A ' A1@< @< FA . G(' [' A @' <66' A==< A' CA ' C<' CA=' 6 ' ' A AF>' E1 C' < <;? ' ' =<FB;<' C<' I1F ; `' <' C< ' ?AI<' ;@<;=' ' AF@ A6@' ' C; E' C1 . =<69' BG ' C<' B= ;1A ' F< ;<(' ' B@1 ' ' A><' C<' B==DAFC' G =1 1 (' A @' ' %AI B= ' ' F 1 1<' C1=' A AF>=' A=' C 6 ' A=' G ==1D6<' C<' C<; 1F' 6AF@ A6@' 9<66' 61><' A' CB @<;D 6 ' 1 ' C<' . 1@= ' 9' C<' < < . 3=' 61 <' A @' D; ><' 1 (' EC16= ' C6A==< A(' EC =<' ; DG=' FFBG1<@' C<' DA >' 9' C<' ;1I<;(' C<6@' C<' B= P 1A ' F 6B . ' 1 ' FC<F>' A @' @; I<' 1 ' DAF>' C<' B= ;1A =' E<;<' E' 1 ' 961?61 ' A6 ?' C<1;' EC 6<' 61 <' %AI B= ' >' A?;A . (' A @' AF@ A6@' 61< ' A@IA F<@' ' (;B (' A @' AG 6< ' CA@' C1=' I1F ;1 B=' < =' G1 FC<@' ' 61F' 91<6@' 9' DA 6<' ' <' < . D;AF<@' AF@ A6@' A @' . A@<' C1 . ' A' . A;=CA6(' A=' E<66' A=' B@1 ' A @' #6A; . ' C<' I1F ; ' 61A@' D<< ' C 6 ' @1=GB <@

A @ E< 91I< C B=A @ . < C< E =1@<= CA@ D<< =CI1B ;
@1=AD6<@ 3

C1= =A ? 1 A; DA 6< @<F1@<@ C< 9A < 1= ;1A C< ;FC@B><=
S C 'A @ <;@1 A @CA@D<< 'D<A < '1 . DA;@ 'A @+ 6A @ ;<=G<F 1I<6 #
A @ ;A F1= 'CA@ D A1 'G<AF< D . <A = 61< . ='=<;1 B= =11F;#F<='
<'F<@<@ C< IA;1 B= 9; G 1<;= 9 C1= = A <= A6 (AIA;1A A @
61 ==1A =<I<;A6 F1;F6<= A @ G; I1 F<= A @ C;<< . 1661 = =BDK<F =N C '
G; . 1=<@ . ;< I<; 'GA ' A C<AI 'EA;' F ;1DB 1 A @ ' A@C<;< '
C< F 1 < A6 D6 F>A@< ' 6;1= 9;# EC1FC EA= = ' 1 ''G<gF< 9 $@++>'
KB;1 B= ' B= ;1A EA= =1? <@ A ' 1< A ' C< C #
F D<; "! A @ E6116= ' 1 = F @1 1 = E<;< = 166 D<1 ?' @1=FB==<@
11AG 6F ' ;A ' A A;; E ;1=>' 9 D<1 ?' A==A==1 A <@ D 'A ' B ?' 9A A 1F
A . <@ AG=' C1= B ?' . A 'EA= =<1M<@ A; . <@ I1 C A'@A??<; A ' 61<
1 . < 'EC< 'C<@< . A @<@'A '1 <; I1<E'E1 C AG 6< A @'A==<; <@ CA '
C<CA@ ;<F<1I<@'A'F . . 1==1 '9; .'O @ '@<61I<;'O<; . A A @ '<P<FB <
< ?<A F< 1' C< G<;= ' 9 C< GG;<== ;' 9C1= F B ; 'A @ C< E ;6@
C< ?61=C 1 ' C< F B;=< 9 C1= FA . GA1? 1 CA@ =< ' B ' 1 . . < =<
96<< = A @ A'CB @;<@ =C1G= 9 EA;'CA@ 6A @<@ 1 ' 66A @ 1 ' C< 1=6A @ 9
A6FC<;< 'A @ 9 B C (<I<6A @ 9 ; 91I< C B=A @ . < E'A1FC<;<'
96B=C1 ?' CA@ 9A66< '1 ' C<1;'CA @= A9 <;'A @<=G<;A <;<' # ?B 16##
=1= A F< A @ C< 'A6;<A@ ' C;<A < <@ E<;G' '6<I ' 9 61<
A 1 A6 0BA;@= 9 C< %<GA; . < ' 9 61< ; C A @ C< A11G; AFC 9
(<; A@< <3= F ;G= F I<;<@ C1= 1 . G ; A ' G6AF< E6116= ' 9<I<;' . E<@
@ B .' C< ?61=C D ' C B=A @= 1 ' C< 1=6A @ 9 A6FC<;< A @ C< '
I<;< F . G<66<@'A '6< ? C ' <IAFBA <$<A6A @ EC<;< C< 1I ' 9 6B=C1 ?'
A6 <;< . A1 <@ 1 ' C<1;'G E<;' AG 6< ' C<A;@ 9 C< 9A16B;< 9 C1=
9 ; . 1@AD6< <PG<@1 1 ' A' 9<E' @A = A9 <;' C< =1? A B;< 9 61< ;<A ' 9
1< AN 9 ; B < EA= = 166 9A1 C9B6 'C1 . A @ C< ;< B; <@'1 ' ;1B . GC '
+A;1= EC<;<C< 9 B @ CA ' C<;< E<;< =<;1 B= . 1=B @<;= A @1 ?= E1 C C<
B; ' 9 . <
+ G< +1B= 'CA@ 'F6 =<@ C1= G ; =" A?A1 = ' C< ?61=C A @ KB= 6 '
@1=G6<A=<@ A ' AG 6< 3= < F; AFC . < = ' C1= <;;1 ; CA@ ;<= 6I<@ '
;<9B=< C< + 191FA6 (B66= ' C< <E ;< FC D1=C G=' C< . G<; ;
1;;1 A <@ A ' C1= 9 ; CE1 C @<G;1I<@ 61< + G< 9 611= < . G ;A6 G E<;A @
A= <PF . . B 1FA <@ ' C< <PF1 < . < ' 9 C< . A ' G GB6AF< A ' C1=
G; F<<@1 ? ><G ' A61I< A= 1 ' EA= D ' C< G;<=< F< 9 C< + G< G6AF<@ C<
;< FC 1 G= 1 ' . < 1 ' A G =1 1 ' 9 ?;<A ' G<;16 ' O< <;A6 1 661=

8*) ' ' - ! " ' : 4 ' '

C< O I<; ;' 9 61< F1 F =1@<;<@ CA ' C< ;< . IA6 9 C< + G< EA=
' # #' <F<==A; 'N A @ +1B= A9 <;' CA I1 ?' D<< ' I1 6< 6 ' ; '
G;1= %.< #9 9; .' C< + 191FA6 +A6AF< EA= 91;= ' ;< . I<@ ' AI i
BL@ $>> A @ C< ' ' A1 <D6<AB ' ' C< 6A <;' G6AF< C< D ;< E1 C
A@ . 1;AD6< C;1= 1A ' 9 ; 1 B@< A '1 . G;1= . < ' 9 9 B;' <A;=3 @B;A 1
'A @ C< A F1< ' FAG1 A6 9 C< E ;6@ EA= ;A =9 ; . <@ 1 ' C< FC1< E '
9 A' ;< FC @<GA; . <
C< GA 1=C 1 =B; ;<F 1 ' CA@ D<F . < . BFC . ;< ?< <;A6 1 . . <@1A <6 '
A9 <;' C< . G<; ;3= @<GA; B;<N A @ A' ;B . 1B) EC1FC EA=
BD7A@ B3' <M@ S >7'$+' L>$+ ' , 0, , G;<A@ AD; A@ CA ' AG 6< ' @< . A @<@ C< A <PA 1 ' 9
C< 6<9 ' DA >' 9 C< D; ' ' ;A F<@ ;<@ BD6<@ C< G GB6A;'
1 @1? A 1 ' A @ ;A?<@ C< 1 =B;?< = ;?A 1M<@ C< . =<6 I<= 1 ' DA @= 9
?B<;166A=@ A @ . A@< C< ;< FC = 6@1<;= <PG<;1< F< A' =<F @ < @<< 1 '
GA1 ' C< G GB6AF< A; =< 1 ' <I<; '@1;<F 1 @ A @ C< @<=1;< 9 ;' A 1 A6
1 @<G< @< F< EA= A' D @ EC1FC B 1 <@ A66 GA; 1<= A?A1 = ' ;A F< ' 'EA=
1 ' IA1 ' CA ' AG 6< 3= ?< <;A6= D A1 <@ B . <; B= I1F ;1<= N CA x <DA=0
1A z ;1B . GC<@ A ' 1B@A@ <A6 1F ;' A ' <@<61 @ A @ @ ' A ' G ; K
EC<;< C B=A @= 9 + ; B?B<=< ;< . A1 <@ ' C< 91<6@ 9 DA 6< N 9 ;' C<
<PA . G6< 9 +A6A9 P C< @<9< @<;' 9 A;A? ==A A @ C< C<; 1= .' 9 1 =1 CA0
D1 A = EC ' A66 E<@ C< . =<6 I<= ' D< DB;1<@ B @<;' 1 = ;B1 = ;A C<;' CA '
=BD . 1 <PF1 <@ C< < CB=1A= . ' A @ GA ;1 1= .' 9 C< GA 1A;@= EC16= ' C<
?61=C =BFF<==9B66 ' =<F @<@ C<1;' <91D; = ' C< C SB6 S =<GC
9 B?C ' E1 C 1;' ; CB;' <66<=6< ' C< 1 @<F1=1I< DA 6< 9 A6A I<; A EC1FC
C< ?61=C F6A1 . <@ A= A' I1F ; 'N <DA= 1A 1 EA= I1F ;1 B= ' C< = '
B?B= ' A ' 6 . AF1@ A @ ; 1<; E1 C E< 91I< C B=A @ . < @<0
9<A <@ 919 ' C B=A @ A ' FA A A @ @A6BF1A 9<66 1 ' C< G E<;' 9 C<
;< FC
GA1 C E<I<; EA= ' < ' F JB<;<@ A @ 1 ' "' EA= F . . < F<@
A 9;<=C FA . GA1? ' A= . B;@<; B= A= C< G;<F<@1 ?' ' EA= F @BF <@ 1 '
C< ; C D ' A;=CA6 BFC< EC ' 1 I<= <@ C< 9 ; ;<==<= 9 ;A? A @
C<6@ CA ' G; I1 F< 1 ' FC<F>' EC16= ' A;=CA6 B6 ' F . G6< <@ 61< =BDK<F0
1 ' 9 @A6BF1A ' C< 6A <;' >' 1 ' =BFF<==1 ' O;A A@A <I166< A @
A6A?A A @ F . G<66<@ C< G; I1=1 A6 SB A' 9 <I166< ' ;< 1;< ' A@1M
EC1FC ;< FC ; G= D<=1<?<@ ' ' C1;@ A; . 1 . @<;' C<
>7BM B3') >A I' 7C@7A 9 A==< A F< 9#D==61 ?' EA= A ' C< =A . < 1 . <
A@+>' B+' B7<D >#E' >+C' 7@<7@ >'B7 C< ?61=C . A;FC<@ A?A1 = ' + ; B?A6 A @ CA@ ' = ;B??6< A?A1 = ' C<
?6 + ; B?B<=< A; . ' 9 <661 ? EC1FC EA= I<;

" ^ ') ' B 7' ' 8*!

=BG<;1 ;' 1 ' B . D<;=& A @' _XID1FC' <I<; C<6<=-' ;< <A <@' D<9 ;<' 1 ' EA;@=
1=D ' A==< A' =B= A1 <@' @<9<A ' A ' C<' D6 @ ' DA 6<' 9' (B=AF & A @
EA-'= GG<@' D ' <661 ? 'D<9 ;<' C<' 61 <=-' 9' ;;<=-' <@;A=&
EC1F61' G; <F <@' C<' FAG1 A6&' A ' @' ;<F<1I<@& ' C<' " C' 9' M@?Q' J@3B7@
B$7@A' @C7>A
F D<;& C<' EC 6<' (;1 1=C' A; . ' C<' G6A ' 9' C<=<' 61 <=
CA@' D<< ' @<=1? <@' D ' <661 ? & A @' @B;1 ?' . ;<' >CA ' A' <A;' C B=A @=
9' . < ' CA@' D<< ' ;A1=1 ?' C<=<' 9 ; . 1@AD6<' @<9< F<= Y' A==< A& F =1@<;1 ?
C< . ' 1 . G;<? AD6<& G = <@' C1-' A; . ' 1 ' D=<; IA 1 ' ' C<' A?B=& D< E<<
6CAB@;A& A A;< . & A @' D;A <=& A @' AEA1 <@' C<' . G<; ;3-' ;@<;=
C16= ' C<' +< 1 =B6A' @<I B;<@' C<' D<= ' ; G-' 9' C<' # ;< FC' A; . &
m1AG 6< ' A A1 <@' C<' C1?C<= ' G 1 ' 9' C1-' G; @1?1 B-' @<= 1 ' JBA66
1 96B< F<@' D ' C1-' @<=1;<' ' CA I<' A ' C<1;& A @' D ' C1-' A . D1 1 ' ' D<' A661<@
1 C& C<' 6@' @4 . A= 1<-' 9' B; G<& C<' ;<GB@1A <@' S =<GC1 <'
B<' (<A 1CA; A1=& ' C1-' 91;= ' E19<& A @' . A;;1<@& ' C<' nn' C' LB#@B+' $GB7?@' B3' @ E0
; >77$@A' >+
9' A;FC& "& A;1A B1=A)' ;FC@BFC<=-' 9' B= ;1A& C<' B= :1A ' ;FC' 5
R' @AB?C <;' 9' C<' . G<; ;' ;A F1= CD?M@AA' "
' C<' F B;=<' 9' C1-' <A;' 66A @' EA=' A <P<@'
+;A F<') AG 6< ' @< C; 1 ?' C1-' D; C<;' B1=& EC =<' B##>+C'<B
-1 ?@ .' CA@' D<F . <' A' @<G ' 9 ;' ?61=C' . <;FCA @1M< " C< 7>+?B' , , 0
0 ' @<F6A;<@' ' C1-' FFA=1 ' C<' . G<; ;3-' G 61F ' 1 ' ;<=G<F ' 9'
C =<' ' EC .' C<' D<= E<@' F; E =' [' @<;= A @&`' C<' =A1@& ' C<'
C1 ?-' C1-' D; C<;=& [' CA ' B;' 91;=' @B ' 1-' EA;@-' . <' A @' ;A F< 3[
C1=' G 61F ' D<1 ?' CB-' G; F6A1 . <@' ' B; G<&'G E<;9B66 ' F ;1DB <@' '
f1; B=<' 1 ' <' 9' C1-' ?< <;A6-' EA-' A ' 61<' =A . <' 1 . <' FA66<@' ' C<' =BF '
<==1 ' ' C<' F; E ' 9' E<@< ' C<' 1 . G;B@< ' A @' C C<A@<@'
;B= AIB-' CA@&D<< ' @;1I< ' 9; . ' C<' C; <& ' EC1FC' 1 ' "!& C1-' B F6<&'
C<' %B><' 9' B@<; . A 1A& CA@' =BFF<<@<@' D ' C<' 1 6<' 9' CA;6<-' : & A @'
C1-' 6A <;' G;1 F<& CA I1 ?' ' FC16@;< & A@ G <@' A-' C1-' = & 1 ' "& (<; A0
@< <& +;1 F<' 9' + W ;I & EC ' EA-' <6<F <@' D ' C<' A <-'
' ;<G<;A6 +;1 F< A6' 9' E<@< ' AG 6< ' 6 ><@' BG ' BK>#
C1-' <6<F 1 ' A-' A ' <I< ' EC1FC' E B6@' F . G6< <' C<' =BDK<F

I' M@K' @N<@+C@C' $+' <M7@@' #$+@A' BG@7' >' AL>?@' B3' A@G@7>#' #@> B@A' J@<S@@+' <M@' > DA '
>+C' <M@' A@>' >+C' ?B+A$A<@C' B3' >' MD+C7@C' >+C' 3$3<K0<SB' 7@CBDJ<A ' SM$?M' ADLLB7<@C' @>?M'
B<M@7' >+C' S@7@' C@3@+C@C' JK' +$+@' MD+C7@C' L$@?@A' B3' ?>++B+' >+C' >' MD+C7@C' <MBDA>+C'
$+@+' B3' SMB ;' +$+@<K' <MBDA>+C' S@7@' + #$AM
<' P' 'BA@LM$+@ i' A>KA' M+7#@A' >?7@<B##B' P J>C' #B+ ' M>C' >' L7@A@+<$; @+<' B3' M@7' 3><@['
>+C' <M@' ?#>DA@' 7@3@77$+ ' <B' C$GB7?@' SM$?M' M>C' J@@+' $+A@7<@C' $+' <M@' BC@' JK' >LB#@B+(A'
C$7@?<' C@A$7@' M>C' J@@+' >' L@7L@<D>#' ADJR@?<' B3' >+N$@<K' <B' M@7 0

1 ' 9 C< ; C ' C1=' = = < . 6 9 ;' C< <I<;' =BGG =<@ CA ' C1=' ?< <;A6 9 ; . <;6 ' C1=' < < . 6 E B6@ < @A ' G;<9<;' C< 1 <;<= =' 9 C1=''G< G6< ' C =< 9 =' 91;= ' F B ; 6 A @ C< G<; . 1 <@ C1 . ' AFF<G ' C< G; 91<1Y<@ F; ' E<@< 6 =1 F< C< AFF<==1 ' 9 CA;6<=' : 6 CA@ A@C<;<@ ' C< F 1 < A6 = = < . 6 A @ 9 ;' A . . < ' C< D6 F>A@< EA=' D=<; I<@ I<;' C< EC 6< 9 B; G<

' C1=' G 1 ' 9 B;' A;;A 1I< 1 ' . A ' D< A=' E<66 ' GAB=< 9 ;' A' . . < ' FA=' A' ?6A F< I<;' C< 1 . . < =< E ;>=' AFC1<I<@ D ' AG 6< 6 A @ ' <PA . 1 < = < 9 C< FAB=<=' 9 C1=' <6<IA ' 1 ' A @ C1=' 9A66 ' < EA=' ;A1=<@ ' C< G1 AF6< 9 ?6 ; D ' C1=' ?< 1B=6 C1=' I1F ;1<=6 A @ C< E166 9 A' G< G6< EC ' E<;< @AMM6<@ D ' C< G;<= 1?< 9 A' <E' A . < =B;; B @<@ D ' A' ?6 ;1 B=' AB;< 6<6 A @ EC1FC =1?C<@ 9 ;' ;@<;6A @ ;<G =< A9 <;' CAI1 ?' =B99<;<@ = ' . A ' ; BD6<=% DB ' C< EA=' ;A1=<@ 1 ' ;<A61 ' D ' CA ' C1@@< ' +; I1@< F< EC1FC G; @BF<=' ' C< C<A ;< 9 C< E ;6@ C< <F<==A; 6 . < ' EC< ' C<1;' 1 . < 1=' F . <6 A @ EC1FC6 ' 9 < ' . 1=B @<;= @ D ' C< . =<6I<=6 @1;<F =' A @ =BGG ; =' C< . ' 166 C<1;' E ;>' 1=' AFF . G61=C<@ ' ;A F< AGG6AB@<@ C< ?1 <A ' ? @ 9 ; B < 9 AG 6< 'D<FAB=< =C< CA@ <<@ 9 C1 . 6 A;1@ D<FAB=<6 A9 <;' CA 1 ?' =<FB;<@ C<;' G E<;' AD; A@6 A @ @ < . BFC 9 ;' C<;' ?6 ; 6 C< CA@ G<;F<1I<@ ECA ' =C< ;<JB1;<@ 9 ;' C<;' 1 <; A6 G; =G<;1 ' < CAI< ;<F B <@ C1=' <PG6 1 =6 C1=' F JB<= =6 C1=' A@ . 1 1=0 ;A 1I< A @ 6<?1=6A 1I< E ;>=6 A @ =GAF< E B6@ 9A16 B=' E<;< E< ' A < . G ' < B . <;A < C =< EC1FC6 C< <99<F <@ 9 GA; 1FB6A;' A @ =G<F1A6 1 <;<= ' 1=' IA= ' 1 <66<F ' < . D;AF<@ <I<; C1 ?' < GA==<@ E1 C B ' <99 ; 6 A @ E1 C . A; I<66 B=' 9AF161 6 9; .' < =BDK<F ' ' A 61<;6 A @ ' @< A16 EA=' ' = . A66 9 ;' C1=' I1?16A ' A < 1 ' '## F . D1 1 ?' C< 1 <;<= =' 9 A' 6A;?< B C9B6 G GB6A 1 ' E1 C C<' . 161 A; ' _1 <;<= =' 9 C1=' < . G1;<6 C< 9 B @<@ =FC 6=' 9 ;' C< A; . ' A @ AI 6 ?AI< ' . 161 A; ' ;?A 1MA 1 ' ' C< G; A 9<=' A @ 6 F<B . =6 G< <@ C<=< <= AD0 61=C . < =' ?;A B1 B=6 ' ' C< = =' 9 C< D;AI< . < ' EC ' 9<66 ' C< 91<6@ 9 DA 6<6 A @ 9 ; . @<@ =<I<;A6 =G<F1A6 <= AD61=C . < =' 9 ;' C<1;' @AB?C <;=% A @ E' @<I 1 ?' C1=' A < 1 ' ' C< F . . <;F1A6 A @ 1 @B= ;1A6 1 <;<= =' 9 C< F B ; 6 C< <= AD61=C<@ C< 1 . F16 O< <;A6 9 AD;1F=' A @ A B9AF B;<=6 D<= E<@ C B;=' A @ ;<EA;@=' ' C< AB C ;=' 9 B=<9B6 1 I< 1 =6 ?AI< A CB @;<@ C B=A @ 9;A F=' ' C< FC< . 1= ' + ; B= ' 9 ;' C1=' @1=F I<; ' 9 ?;AG< =B?A;6 @<F ;A <@ <; ABP E1 C C< F; ==' 9 C< <?1 ' 9 B;

! @+@7>#' 7@ ; >7#$A' B+' >LB#@B+' >+C' C1=' 7@$ + '

' B ; @' >##>$7A

?MBB#A

7>C@' >+C' $+CDA<7K

9 ;' 1 . G; I< . < =' 1 ' C< . A B9AF B;< 9' F6 C=& A @& 99<;<@' A' . 1661 ' ' A ' <' EC ' =C B6@' 1 I< ' A' . AFC1 <' 9 ;' =G1 1 ?' 96AP ' C<' E 66< ' A @' =16>' . A B9AF B;<=' E<;#' 1 . . < =<6 ' < F 1BA?<@' D ' C1 . & A @' C<' FB6 10 IA 1 ' 9' F ' EA=' A < . G <@' D ' C1=' ;@<;=' 1 ' ;=1FA' A @' A6 ' ' =BFC' . A <;=' A=' C<' G; I1=1 1 ?' 9' E =' A @' A; . 1<=& C<' F6 C1 ?' 9' C1=' ; G=& C<' =A 1 A; ' F @1 1 ' 9' C<' FAG1 A6& A @' C<' AD 61 1 ' 9' . < 0 @1F1 & C<' D ' B; =' @1;<F <@' C1=' A < 1

AG 6< 3=' C B?C =' E<;<' ' E 1 ' AD= ;D<@' D ' . A <;1A6' . A <;=& CB ' 9 B @' 1 . <' ' @E<66' ' =BDK<F =' 9' A' C1?C<;' =G<F1<=' 9' 1 <;<= & A @" +;A F<' E<=' ' C1 . ' C<' W;<F 1 ' ;' 91;= ' =B??<= 1 ' 9' A=' 0;<A' GBD&IF . A ' 1 . G<;1=CAD6<' . . < =' A=' B=<9116' <= AD61=C . < =& E ;>=' C<;<I<;' C<;<' AGG<A;<@' A' <F<==1 ' 9 ;' C< . ' C<' F = ;AF <@' ; A@=& @B?' FA A6=& DB16 ' D;1@?<=& A @' 611=' ' 6 ' 1 ' ;A F<& DB ' 1 ' C<' 9 ;<1? ' 6A @=' EC1FC' CA@' D<< ' A <P<@' ' C1=' IA= ' < G1;<' C<' 9A . B=' 1 . G6 ' 6 A@& C<' FA A6' 9' A1 LB< 1 & A @' C<' CA;D B;=' 9' E<;G' A @' C<;D B;?& =C E' ECA ' C<' EA=' AD6<' ' @ ' 1 ' . A <;=' 9' C<' >1 @ ' C<' (B;=<& C<' A@<6<1 <& C<' F 6B . ' 9' C<' +6AF<' < @V . <& C<' 16<' ;1B . GCA6' A;FC& A @' C<' D;1@?<=' 9' B= <;61 M' A @' S< A' E<;<' DB16 ' ;' G6A1 . <@' @B;1 ?' C1=' ;<1? ' AG 6< ' < ;1FC<@' C<' A 1 A6' 61D;A; & CA@' C<' E ;>=' 9' C<' +A C< ' F 1 B<@& ;@<;<@' C<' + ' @<' 6A' F ;@<' ' D<' @<F ;A <@' E1 C' = A B<=' 9' C =<' 9' C1=' G;1 F1GA6' ?< <;A6=' EC ' CA@' @1<@' ' C<' 91<6@' 9' C B;& A @' 9 ; . <@' C<' 1@<A' 9' F =<F;A 1 ?' A ' A1 ' 1b< 1=' C;<<' G;1 F1GA6' <PG1A ; ' A6 A;=' 9 ;' C<' C;<<' ; A6' ;AF<=' EC1FC' CA@' BFF<<@<@' <AFC' C<;' ' C<' ;< FC' C; <

6 C B?C' C<' EA=' C1=' E ' ;<1? ' 1 1= <;& . <' <F;< A; & CA F<66 ;' 9' C<' PFC<JB<;& A @' 1 1= <;' 9 ;' A;& C<' 9 B @' 1 . <' 9 ;' <I<; ' @< A16& ' A @' CA@' A ' <PAF ' AFF B ' 9' <I<; C1 ?' =< ' 1 ' ' C1 . ' <' G ==<==<@' 1 ' A ' < . 1 < ' @<?;<<' C<' 9AFB6 ' 9' KB@?1 ?' 9' C<' FCA;AF <;=' A @' FAGAF1 1<=' 9' C =<' EC ' =<; I<@' C1 . & A @' 1 ' EA=' ' C1=' G;<F1 B=' 9AFB6 ' CA ' C<' E<@' C<' 9AF ' CA ' C<' A6 . = ' A6EA =' 9 B @' C1=' 1@<A=' E<66' B @<;= @' A @' E<66' FA;;1<@' B & A @' CA ' C<' ;A;<6 ' CA@' ' FCA ?<' C1=' 1 1= <;=& . @ A@ . 1 1= ;A ;=& ;' F B F166 ;=' C<' . < ' EC & B ' 9' C<' A >=' 9' C<' A; . & CA@' C<' FC1<9' =CA;<' 1 ' C<' ?;<A ' C1 ?=' AFF . G61=C<@' 6h ' C1=' ;@<;=& E<;< , 1 ' ;<=G<F ' ' 9 ;<1? ' A99A1;=&" A66< ;A @' A @' CA;A ' GA? & %B><' 9 A@ ;<N 1 ' 91 A F1A6' . A <;=& OAB@1 & %B><' 9' OA< A& 1F161< & A @' (A;DW A;D 1=& EC =<' 1 <?;1 ' <JBA66<@' C<1;' 1 < 1?< F<N 6A' C . <' A99A1;=&' C<' ; . ' @<' A61I< & EC & A ' 91;= ' @1;<F ;

?< <;A6' 9' ; A@=' A #' D;1@?<=(' EA=' . A@<' A' 1 1= <;(' A @' G<;9 ; . <@' ;1= @B 1<=' E1 C' 1 <?;1 ' A @' C1?C . 1 @<@ <==' N A @' 91 A66 (' C<' 1 1= <;' 9' +BD61F' = 1'BF 1 ' EA=' A <=(' C<' O;A @' Q A= <;(' 9' C<' 1I<;=1 (' A' @1= 1 ?B1=C<@' G < N EC ' CA@' D<< ' D; B?C ' BG' 1 ' C<' 6@' =FC 6' 9'61 <;A0 B;<' A @' . A <;=(' A @' EC ' 6AI1=C<@' BG ' 61<' ;<G;<=< A 1I<' 9' C<' <E' 1 . <=' 1 ?< B B=' C . A?<' EC1FC' ' 9 < ' ;<=< . D6<@' =<1NI16<' 96A <; ' (<=1@<=' C<=<N' C<;<' E<;<' 1 ' G ==<==1 ' 9'C1?C' @1? 1 1<=' ;' ?;<A ' < . G6 0 . < =(' <D;11 (' C<' %B><' 9'+1AF< MA'N < 1<;(' %B><' 9' A==A'N A;F (' 5%B><' 9' (A==A 'N A @' %A;B(' EC ' B 1 <@' ' A' . A;I<66 B=' AG 1 B@<' 9 ;' C<' F' 9' # F B;A?<' EC1FC' EA=' G; 9' A?A1 =' A 'A==AB6 ' C< GB F16' 9' A <' EC1FC' AG 6< 'CA@' ;?A 1M<@' 1 'A' . A <;' KB= 6 ' A@ . 1;<@(' EA=' ;< @<;<@' 1 B= 1 1 B=' @B;1 ?' C1=' ;<1? ' D ' ?;<A ' A6< =(' D<1 ?' A@ ; <@' D ' C<' C1?C' JBA61 1<=' 9' C<' 6AE <;=' + ; A61=' A @' ; FC< (' C<' F . G16<;=' 9' C<' F1I16' F @<(' A @' 9'S BD<; (' 66< (' W? AB6 '@<' A1 ' S<A ' @3 ?W6 (' A @' C<' 1 . . ; A6' BI1<; ' =' 9' C<=<' . < 'CAI<' 6<9 ' 6A= 1 ?' . < . ;1A6=' 9' C<1;' 6AD ;B =' AG 6< (' D ' C<' I1? B;' 9" C1=' ?< 1B=' A @' C<' F . D1 A 1 ' 9'< . 1 < ' JBA61 1<=(' F ;1I<@' 'D<' =BG<;1 ;' ' C< . ' A66(' A @' 1 ' EA=' D ' . A6@ ?' B=<' 9' C<1;' A6< =(' D ' =1B;; B @1 ?' C1 . =<69' E1 C' A66' C<' 166B= ;1 B=' . < ' 9' ;A F<(' CA ' C<' CA@' ;<AFC<@(' 1 ' "(' C<' C1?C<= ' @<?;<<' 9' G E<;' A @' ?6 ; ' <I<;' A A1 <@' D 'A ' = I<0 ;<1? ' 1 ' B; G<' 1=' < . G1;<' A9 <;' C<' 6A=' A <PA 1 =' F A1 <@' A' G GB6A 1 ' 9' 919 ' . 1661 =(' EC ' E<;<' @1= ;1DB <@' A . 1@=' A' CB @;<@' A @' 611; '@<GA; . < = ' C<' . <A 1 . <(' D< <A C' A66' C1=' ?;A @<B;' A @' G; =G<;1 'A' ?;<A ' <I16' >+A@>B3M$A' ?;A@BA66 ' @1??1 ?' A ' AD ==(' A @' C1=' <I16' EA=' C<' 1 GG; ;3=' E ' 1 . D B @<@' A . D1 1 ' 9' C<' CA@' <I<;' =<GA0 ;A <#' C1=' G<;= A6' 1 <;<= =' 9; .' C =<' 9' ;A F<(' C<;<' 1=' ;<A= ' 'D<61<I<' 5 CA ' C<' . 1?C ' CAI<' 91 A66 ' ;1B . GC<@' I<;' A66' ;<=1= A F<N' DB ' @B;1 ?' C<=<' 6A <;' @A =' C1=' G<;G< BA6' 1 IA=1 =(' 1 . @<; A>< ' <1 C<;' 9 ;' C1=' E ' =A><' ;' CA ' 9'C1=' 9A . 16 (' CA@' ;<@ BD6<@' C<' 9<A;=' A @'K<A6 B= ' 9'9 ;<1? ' G;1 F<=(' E1 C B ' G; @BF1 ?' A ' C<;' ;<=B6 ' ' ;A F<' CA 'A' G<;G< BA6' =AF;191F<' 9' . < ' A @' . < ' +A; ' CA ;<@' C< ' ;<AE ><' E1 C' ;< <E<@' CA ;<@' 1 ' C<' 1 <;1 ;' 9' C<' >1 ?@ . (' A @' 9 B @' A ' <FC ' A . 1@=' C<' F6A==<=' EC ' CA@' A==1= <@' ' ;A1=<' A @' . A1 A1 ' C<' 1 . G<;1A6' C; <' C<' ;<=< . < (' . ;< I<;(' 9' C<' A;1= F;AF ' A @' C<' 9;1< @=' 9' 61D<; ' @1@' ' EA ' 9 ;' G;< <P =' A @' ?< B1 <' FAB=<=' C<' 6@' A;1= F;AF ' <I<;

7@ >7C@C >LB#@B+ >A > L>7G@+D JB ; B3 >7@GB#D<$B+ SM$?J $< J@#C $+ MB77B7 3B7 @<<$+ <M><M@ M>C J@@+ >?M$@3> @+< $+ $<A ADL0 L7@AA$B+] >+C <M@ C@ ; B?7><A?D7A@C$+M$; <#$@ ; >+ SMB M>C 7@+BD+?@C >## <M@$7 L7$+?$L#@A >3<@7 M>G$+ BJ<>$+@C M$A LBS@7 D+C@7 <M@ B7C@7 B3 <M$+ A SM$?M <M@R M>C @A<>J#$AM@C M@ ?7@><$B+ B3 >+@S +BJ$#$<K S>A @aD>##K B33@+A$G@ <B <M@ B#C +BJ#@A >+C <B <M@ L><7$B<A M@ ?B ; L#@<@ ADLL7@AA$B+ B3 <M@ JJ@7<K B3 <M@ L7@AA7@+C@7@C <M@ 77<><$B+ A<7B+ @7 JK Q@@L$+ $< ?B+3$+@C $+ ; @+(A M@>7<A >+C >#<MBD M >LB#@B+ M>C +B< ?@>A@C <B ?B+aD@7 M@ S>A +B< >J#@ <B A$#@+?@ M$A @+@ ; $@A JK #$$A G$?<B7$@A <M@ G@7K +D ; J@7 B3 SM$?M @+3@@J#@C <M@$7 L7@A<$ @ M@ 37$ M<3D# GB$C ?>DA@C JK <M@ G>7 $+ <M@ 7>+QA B3 <M@ KBD+ @7 @+@7><$B+ J@?> ; @ C>K JK C>K ; B7@ GAJ#@] <M@ ?B+AD ; L<$B+ B3 ; @+ G>A 37$ M<3D# >+C >3<@7 @>?M G$?<B7K LDJ#$7 ><@+<$B+ S>A C$7@?<@C #@AA <B <M@ <@77$<B7K ?B+aD@7@C <M>+ <B <M@ J#BBC AL$#<] >+C <M@ C@AL>$7$+ ?7$@A B3 ; B<M@7A G@7@ M@>7C >JBG@ <M@ <7$D ; LM>#AMB$<<A

J7B>C <M@ LB G@7 B3 >LB#@B+ ; B7@ >LL>7@+< <M>+ 7@>#7@A<@C B+ +B AB#$C 3BD+C><$B+ $A J7B<M@7A@G@+ GMB M>C J@@+?7B G+@C JK M$A B G M>+C G@7@ $+C$ +>+< >< J@$+ B+#K 7@ >7C@C JK J7B>C M$; >A M$A #$@D<@+>+<A >+C L@7?@$G@C <M>< GM@+ M@ 7>+<@C <M@ ; <M@ <$<#@ B3 Q$+ S$<MBD< >##B G$+ <M@ ; 7BK>#LBS@7 M@ M>C 7@+C@7@C $< $; LBAA$J#@ 3B7 <M@ ; <B 7@$ + +@ B3 <M@ ; >JC$?><@C >+C <M@ B<#$@7A M@A$<><@C J@< G@@+>JC$?><$B+ >+C 7@GB#< M@ LBLD#><$B+A B3 <M@ >++@N@C ?BD+<7$@A G@7@ BG@7 GM@# ; @C G<M <M@ JD7C@+ B3 ?B+A?7$L<$B+ S>7 <>N@A >+C <M@ ; >$+<@+>+?@ B3 <7BBLA < G>A $+ G>$+ <M>< <M@ ; L@7B7 +D ; 1 J@7@C 7@>< ABG@7@$ +A > ; B+ A< M$A >##$@A M@ #><<@7 ?BD#C +B< 3B7 @< <M>< M$A >##$>+?@ M>C J@@+ 3B7?@C DLB+ <M@ ; JK G$?<B7$@A >+C <M@$7 BD+C@C MB+BD7 C@ ; >+C@C AB ; @ 7@G@+ @ DA<7$> >+C 7DAA$> M>C ?7D@# >337B+<A <B @33>?@ >+C +D ; @7BDA L7BG$+?@A <B 7@ >$+ ! 7@>< @N?$<@0 $+@$R L7@G>$#@C <M7BD MBD< >## <M@ D+$G@7A$<$@A >+C A@?7@< AB?$@<$@A $+ ! @7 ; >+K >+C >LB#@B+ M>C >#7@>CK $+ , GM$#A 7@AC+ ><?MB+0 J7D++ J@@+ B+ <M@ LB$+< B3 L@7$AM$+ >A M>A J@@+ ; @+<$B+@C >JBG@ +C@7 <M@ C> @7 B3 > KBD+ 3>+><$? L>$+ 37B ; SM$?M M@ ABD M< <B <@>7 <M@ #@3< J>+Q B3 <M@ J7B 3B7 <M@ LD7LBA@ B3 >++@N$+ $< <B 7>+?@ >+C B7<D >#GM$?M M@ M>C >AAD ; @C <M@ LBS@7 B3 CGC$+ >< M$A G@#7@R@?<@C M$A KBQ@ >+C ADLLB7<@C JK + #>+C BLLBA@C >+ $+G$+?$J#@87@A$A1 <>+?@ <B >LB#@B+ SMB @NM>DA<@C M$; A@#3 $+ M$A @33B7<A<B ; >$+<>$+ <M7@@

A; . 1<= ' A 9 ; . 1@AD6< 9 1 ?' C< 9A A6 F 1 < A6 = = < . ' 91 A66 ' A; B=<@ A?A1 = 3 C1 . " < I <; ' F . . <; F1A6 1 <;<= (A @ D61 @<@ C1 . =<69 D ' ?1 I 1 ?' C1 . ' A ' AGGA;< ' G;< <P ' 9 ;' C1= F 1 BA6 B=B;GA 1 = ' < G<;0 F<1 I<@ CA ' C1= = = < . ' 1 . G =<@ = ' C<A I '&A DB;@< (= ' @1;<F ' A ' 1 F I<0 1< F<(BG ' D C = I<;<1? = A @ G< G6<=(CA ' C< F B6@ EC<;< < ;B= '1 = <P<FB 1 ' ' A ' < DB ' C1 . =<69 ' 9 <;' CA I 1 ?(E1 C C1= DK<F (A <P<@ 66A @ A @ C< . A ' A <= ' ;A F<(A @ . A@< 1; ;<F F16AD6< < . 1<= 9 C< + G< A @ C< F6<;? (C< I< B;<@ = 166 9B; C<;(A @ ' C< 8 C 9 %<F< . D<;("(E1 C B ' A ' G;<61 . 1 A; ' A 1 . F< . < (A <P<@ ' C1= < . G1;<(D ' A < A B= C ' =B6 B . (C< A6 1=(C< A =<A 1F E =(A @ C< F A= = 9 C< (A6 1F 9; . ' C< . = ' C< 6D<' 1;FB . = A F<=(=A1@ C< . G<; ;(@< . A @<@ =BFC A . <A=B;<(A @ C< . A@< I A?B< G; 0 . 1=<= 9 1 @< . 1 ' ' C< G;1 F<= @<=G 16<@ D ' C1= 9; <=C B=B;GA 1 N %B;1 ? C< G;<I A6< F< 9 =BFC A G 61F ' A= C1= C<;< EA= ' 6 ?<;' =<FB;1 ' 9 ;' A ' = I<;<1? ' ;' ?BA;A << 9 ;' C< D=<;I A F< 9 A ' ;<A (A @ 1 (EA= <I1@< ' CA ' <1 C<;' ;A F< . B= ' D< I A JB1=C<@ D ' B; G<(;' CA ' C< EC 6< 9 B; G< . B= ' D<F . < ;A F<' ' 1 . . @<;A < A . D1 1 ' F . 0 G<66<@ C< . G<; ;' 1 F<==A 6 ' ' 91?C ' A?A1 = ' C< 6<A?B< 9 @ A= 1<=(G< G6<=(C< G;1<= C @(A @ F . . <;F<(A @ EC< ' C< D<61<I<@ CA ' A66 E<;< ?A1 <@ I<;' ' C1= I1<E= D<FAB=< A66 E<;< =BD . 1==1 I< ' C1 . (C< 9 B @ ' CA ' C< CA@ = E ' 1 ' <I<; ' @1;<F 1 ' C< ?<; . = 9 A ' GG =1 1 ' EC1FC EA= @<= 1 <@ ' <PG6 @<' 1 ' A <; ;1D6< . A <;' ' C< I<; ' 9113= ' @A ' ' EC1FC C< =C B6@ =B9 <;' A ;<I<;=<

. ?= ' A66 C< I<;<1? = 9 B; G<(1 ' EA= 6<PA @<;' EC ' A ' C1d G<;1 @ EA= FAGAD6< 9 FAB=1 ?' AG 6< ' C< . = ' A P1< ' 611= G;1 F<(1 ' 9AF (EA= A ' F< C< . = ' G E<;9B6 ' AFF B ' 9 C1= A; . 1<=(A @ C< . = ' @1991FB6 ' ' =BD@B< ' AFF B ' 9 C< ?< ?;AGC1FA6 G =1 1 ' 9 C1= < . G1;<' ;' = . < 1 . <GA= (9 ;' C< GB;G =< 9 . A1 A1 1 ?' A ' ? @ B @<;= A @1 ?' E1 C AG 6< (C< CA@ ' ' ;<=1= ' C< = 61F1 A 1 = 9 C< ?61=C 0 I<; 0 . < ' A @ C1= 6@ A 1<= ' C< 1 < (A @ ' = ;B??6< A?A1 = ' C< ;< . = ;A F<= 9 C< B==1A ' A;1= F;AF (EC1FC(=1 F< 1;< MA;3= A@C# ' ' C< F 1 < A6 = = < . ' CA@ D<< ' B AD6< ' 91 @ B 6< = 9 ;' C< G; 0 @BF = 9 C<1;' <= A <= ' 6<PA @<;' CA@ D A1 <@ 1 6A @(6@A I 1A(A @ A A'FC1A(= ' 6 ?' F I< <@(A @ EA= A P1 B= CA ' C< ;< FC . G<; ;' =C B6@ @<F6A;< 1 ' A' 9 ; . A6 . A <;' A?A1 = ' C< 9B B;< ;< <= AD61=C . < ' 9 C< >1 ?@ .' 9 + 6A @ ' < EA= A6;<A@ ' F . G6A1 1 ?' 9 AG 6< 3=

@+><+A' B+F AB#<B ;'B3' @1 ?@ ; J@7 ,2' ' +'+@N><$B+' B3' <M@' >+A@><$?' BS+A' >+C'<M@' ?B>A<A' B3'<M@' >#<$?' <B' <M@']:$+L$7@

0F ` #<7A' ' ' ' : !>' 12/' +'

DA 6<' >' G6AF<&' EC1FC' A ' C<' < @' 9' C;<<' @A =' EA=' = 166' B @<F1@<@&' A @' EC1FC' C<' E B6@' CAI<' ?A1 <@&' AGGA;< 6 &' 19' C1=' =BGG6 ' 9' A . . B 1 1 ' CA@' ' 9A16<@&' A @' 19' C<' ?< <;A6=' B @<;' C1 . ' CA@' D< <;' D< <@' C1=' ;@<;=' C<' ?61=C' ;< A1 <@' C<1;' G =1 1 =&' A @' A==< A&' EC ' EA=' . BFC' E<A>< <@&' CAI1 ?' ;< A1 <@' G ==<==1 ' 9' C<' 91<6@' 9' DA 6<' 9 ;' = . <' '@A =&' ;@<;<@' A' ;< ;<A &' A @' C< ' 9<66' DAF>' BG ' A6A . A FA' AG 6< ' I<G; AFC<@' C1 . ' 9 ;' ' CAI1 ?' D<< ' I1F ;1 B=&' A @' ;<G6AF<@' C1 . ' 1 ' 611=' 5F . . A @' D ' rnA;=CA6' A; .

C<' . G1;<' EA=' 1 ' A' = A <' 9' @<F61 <N DB ' 9A <' = 166' ?;A <@' ' C<' (1; C' 9' C<' . G<; ;' A' ?;<A ' A @' . BFC' 6 ?<@' 9 ;' 9AI B;' <' CA@' A 1 1 ?' 9' (; <& ??KK' K K B' C1 . ' 1 ' A;FC&' N' A @' C<' D1; C' 9' C1=' FC16@& EC ' EA=' G; F6A1 . <@' - 1 ?' 9' . <' 1 ' C<' F;A@6<&' AGG<A;<@&' D ' A==B;1 ?' C1 . ' 9' A' =BFF<== ;&' ' CAI<' F = 61@A <@' C1=' 9 ; B <=' AG 6< ' E' @<=1;<@' ' <; . 1 A <' C1=' G; ;AF <@' @199<;< F<=' E1 C' @1<' B; ' 9' . <b' A @' E1=C<@' ' A==< . D6<' A' 0< <;A6' B F16' 1 ' +A;1=' ' C<' @A ' ' EC1FC' C1=' = ' =C B6@' D<' DAG 1M<@&' 9 ;' C<' GB;G =<' 9' ;<?B6A 1 ?&' E1 C' C<' A==1= A F<' 9' CA ' A==< . D6 &' C<' <FF6<=1A= 1FA6' A99A1;=' 9' C1=' < . G1;<

C<' I<;<1? ' + 199&' @<G;1I<@3 9' C1=' < . G ;A61 1<=&' EA=' = 166' @< A1 <@' < 1 H'D<' AG 1I1 &' 1 ' EC1FC' C<' G<;=1= <@' 1 ' ;<9B=1 ?' 1 = 1 B <' C<' ;< FC' D1=C G=' AGG 1 <@' D ' C<' . G<; ;& C<' . G<; ;' B . D<;' 9' EC1FC' CA@' D<< ' ;A1=<@' ' E< =<I< Y AG 6< ' @<=1;<@' CA ' C<' + G<' =C B6@' AFF<G ' A ' k1<' <PG< =<' 9' ;A F<' A' B . G B B=' DB ' @<G< @< ' <= AD61=C . < ' A ' . <& A ' +A;1=&' ;' A ' I1? &9' A @' =C @@' CB=' ;< B F<' C1=' < . G ;A6' G E<;' ' <' @< . A @<@& . ;< I<;&' ' C<' ?; B @' 9' C<' <F<==1 1<=' 9' 61<' =<I<;A6' @1 F<=<=&' CA ' C<' D1=C G=' =C B6@' D<' FA 1FA66 ' 1 = 1 B <@&' A @' = B?C ' = . <' 6<?A6' . < C @' 9' G; I1@1 ?' 9 ;' C<1;' 1 = 1 B 1 ' =C B6@' C<' + G<' ;<9B=<' ' D<=' E' 1

+1B=' ' C B?C ' CA ' D ' A?;<<1 ?' ' C<' . G<; ;3=' 91;=' G; G =1 1 ' C<' E B6@' D<' 9A161 ?' 1 ' C1=' @B &' A @' D< ;A 1 ?' C<' =AF;<@' ;1?C =' 9' 61 ' 6 ' <<&' EC1FC' C<' CA@' =E 9 ' ' . A1 A1 #' A @' D6 ' ;<9B=<@' ' =BD . 1

4' >LB#@B+' M>C' B7C@7@C' <M@' #$>L<@7' <B' J@A<BS' <MB' aD>#$<K' B3' - ' - ' DLB+' <M@' +B ; $+><@C' J$AMBLA ' SM$?M' @+>J#@C' <M@' #><<@7' <B' BG@7+' <M@$7' C$B?@A@A ' >' <' #@>A<' > ' >C ; $+$A<7><B7A ' >7C$+>#') >$$V ' SMB' M>C' J@@+' +B ; $+><@C' 7?MJ$AMBL' B3' >7$A ' BG@7+@C' M$A' C$B?@A@' $+' <M$A' S>K

<' <' G$ +B+ ' MBS@G@7 ' >LB#@B+' S>A' S$##$+ ' <M><' <M@' BL@' AMBD#C' JB' $+C@L@+C@+<' $3' M@' SBD#C' >??@L<' <M@' 3> ; BDA' C@?#>7><$B+' B3' , ' SM$?M' C@?#>7@C' <M@' #$J@7<$@A' B3' <MB' ! >##$?>+' ?MD7?M

' C1=' E ' @WG =A1' A ' C<' <PG< =<' 9' A' . A? 191F< ' <= AD61=C . < ' ['1=' &'' C<# =A1@&' [C<' A 1FA ' CA ' ' @< . A @&' DB ' C<' FA AF . D=' < ' . <' DB ';< B; ' E1 C' A' 9<E' 6@' G;1<= =' ' < 61?C < ' . <' . C' C<1;' F B =<6=&' A @' ' E166' F 1 B<' . ' + 191FA6' 9B F 1 =' EC16= ' =BD . 1 1 ?' ' =<=A;&' A=' @1@' C<' 91;= ' AG = 6<= Q' <' EA=' . ;<' 1<6@1 ?' ' C<' =<F @' G 1 &' C<' 1 = 1 B 1 ' 9' C<' D1=61 G=&' A @' AGG<A;<@&' 1 ' E ;@=' A ' 6<A= &' ' CA I<' ' @<=1;<' ' GG =<' C<' 1 = 1 B 1 ' 9' C<' . 1 A <@' D1=C G=' D ' A' . < ; G 0 61 A &' A9 <;' A' @<6A ' 9'=1P' . C=

BFC' EA=' C<' =<;1 B=' JB<= 1 ' EC1FC' C<' . G<; ;' 1 < @<@' ';<?B6A <' 1 ' A' @<91 1 1 I<' . A <;' D ' F I >1 ?' 1 ' +A;1=&' 1 ' A' A 1 A6'

B F16&' A ' C<' ;< FC' G;<6A <=' C<' B F16' F . . < F<@' 1 =' =1 1 ?=' 1 ' +A;1=' ' C<' ! C' 9' SB <&Y' A @' E1=C1 ?' ' F . . < F<' D ' A ' AF ' 9' @<9<;< F<' EA;@=' C<' . G<; ;&' AGG 1 <@' A=' 1 =' G;<=1@< ' A;@1 A6' _ <=FC&' AG 6< 3=' B F6<&' C<' ;FCD1=C G' 9' =' A @' +;1 . A <' 9' C<' 0AB6= '' 1 6< ' @<DA <=&' C E<I<;&' =G<<@16 ' A13 =<' 1 ' C<' D = .' 9' C<' B F16' E1 C' ;<=G<F ' ' 1 =' F . G< < F<' ' @<F1@<' E1 C' ;<=G<F ' ' C<' ?;<A ' JB<= 1 ' EC1FC' CA@' D<< ' =BD . 1 <@' '1 =' F =1@<;A 1 ' ' F . 0 . 1 <<&' . 1 A <@' D ' C<' ==< . D6 &' =< ' 1 ' A' ;<G ;' GG =<@' ' C<' E1=C<=' 9' C<' . G<; ;&' A @' C<' ;<A@1 ?' 9' C<' ;<G ;' A; B=<@' A' I1 6< ' = ; .'N = . <' . < . D<;=' G; <= 1 ?' 'E1 C' 1 @1? A 1 ' A?A1 =' C<' =CA . <9B6' ;<A . < ' ' EC1FC' C<' + G<' CA@' D<< ' =BDK<F <@&' A @' A66B@1 ?' ' C<' (B66' D ' EC1FC' AG 6< ' CA@' D<< ' <PF . . B 1FA <@' ' C1=' B <P0 G<F <@' <E=' C<'5 . G<; ;&' 1<6@1 ?' ' C1=' ;A?<&' @1== 6I<@' C<' B 0 F16&' A @' CA@' C;<<' G;<6A <=&' C<' (1=C G=' 9' ; <=&' B; A &' A @' 0C< &' 1 . G;1= <@' 1 ' 1 F< <=' C< &' D ' C<' A@ I1F<' 9' A;@1 A6' 16AB; &' C<' CA@' C< . ' A6' =B . . <@' =<GA13A <6 &' A @' CA@' C<1;' 1 @1 I1@BA6' A@C<=1 ' @< . A @<@' ' C<' @<F6A;A 1 ' 9 ; . <;6 ' AGG; I<@' 9&' D ' E ;@' 9' . B C&' D ' C<' + G<&' A @' EC1FC' AB C ;1M<@' C<' . < ; G 61 A ' ' ?;A ' 1 = 1 B 1 ' ' C<' D1=C G=' . 1 A <@' D ' C<' . G<; ;&' 19&' A9 <;' A ' 1 <; I A6' 9' =1P' . C=&' C< ' CA@' ' D A1 <@' 1 ' 9; .' C<' B;' 9' . <' 1?C 91 I<' D1=C G=' B ' 9' A' C1 . @;<@' A @' 919 << ' CA I1 ?' AGG; I<@' C1=' G6A &' C<' . G<; ;' A?A1 ' A==< . D6<@' C<' B F16&' A @' E' D A1 <@' 9; .' 1 ' A ' A6 . = ' B A 1 . B=' I <' 1 ' 9A I B;' 9' C1=' E1=C<=' C<' B F16&' C E0 <I<;&' E1 C B ' ;< I1 I1 ?' C<' #JB<= 1 ' 9' F . G< < F<&' <PG;<==<@' A' E1=C' CA ' C<' I<;<1? ' + 199' =C B6@' D<' ;<JB<= <@' ' AGG; I<' 9' 611=' @<F;<<'

I' M@' BD+?$# M>C' +B<' M@B+' >J#@' <B' ; @@<' >A' >LB#@B+' M>C' S$AM@C ' B+' M$A' AB+(A' J>L<$A ; $<# C>K ' JD<' >AA@ ; J#@C' $+' <M@' 3B#$B0S$+ ' S@@Q

619<' %<A9' ' <I<; ';<. = ;A F<' AG 6< ' A??;AIA <@' 61<' 9A . 1 <' D ' 6A 1 ?' A' AP' BG ' ?;A1 N' A @&' < 1;<6 ' AD= ;D<@' D ' C1=' A;616F<' G; K<F =&' C<' 9 ; . <@' C<' 9<E' . < ' EC ' CA@' <=FAG<@' C<' F =F;1G 1 =' 9' C<' 6A=' <A;=&' 1 ' A' A 1 A6' . D16<' ?BA;@&' A @' G1 16<==6 ' GB;=B<@&' D ' . <A =' 1 ' B=<' @B;1 ?' C<' <1? ' 9' <;; ;&'=1P ' C B=A @';<9;AF ; ' F =F;1G =' EC ' CA@' 'K 1 <@' C<1;' ;<?10 . < =' C<1;' 1 . CAGG ' 9A . 161<=&' C B?C B ' ;A F<&' E<;<' ;< @<;<@' ;<0 =G =1D6<' 9 ;' C<1;' AD=< F<' ;' C<1;' 961?C &' =BDK<F <@' ' F;B<6' <PAF 1 =&' A @' F . G<66<@' ' =BGG ; ' A ' C<1;' E ' <PG< =<' ; G=' EC ' E<;<' C<' DK<F =' 9' C<' GBD61F' CA <' B @<;' C<' A . <' 9' ' C<' F =<0 JB< F<=' 9' C<=<' G; F<<@1 ?=' E<;<' ;<I 6 =&' EC1FC' E<;<' =<I<;<6 ' ;<G;<==<@' ' =<I<;A6' G 1 =' +A;1=&' <I< &' . A@<'5F . G6A1 =&' A @' C<' . G<; ;' ;< 1;<@' ' A1 ' 6 B@' = ' A=' ' D<' B ' 9' C<A;1 ?' 9' C<' . B; . B;=' EC1FC' A; =<' 9; . ' C<' G< G6<' A=' C<' GA==<@' A . 1@=' C< . ' @' 19' =BFC' <I16=' E<;<' '1 6<;AD6<' 1 ' ;A F<&' C< ' E<;<' . BFC' . ;<' = '1 &' C<' B CAGG ' F B ;1<=' ;;C1FC' AG 6< ' CA@' F JB<;<@&' EC1FC' E<;<' F;B=C<@' D ' AP<=' A @' @<IA= A <@' D ' C<' F 1 BA6' GA==A?<' 9' A; . 1<=' N A @' C<' ;< FC' A . < D<FA . <' @1 B=' ' C<' G< G6<=' EC ' =BD . 1 <@' 1 ' @<=GA1;' ' C<' ;B6<' 9' +;A F<' ;' 1 =' GG;<==1I<' A=F< @A F ' ' EA=' ' C<=<' G< G6<=&' C E<I<;&' A @' C<1;' = I<;<1? =&' CA ' AG 6< ' C B?C ' C<' F B6@' ;<6 ' 1 ' C1=' < <;0 G;1=<' A?A1 = " B==1A&' A @' 1 ' EA=' 1 ' C1=' D<61<9' CA ' C<' CA@' 1 . G =<@' C1= A661A F<' BG ' H B= ;1A' A @' +;B==1A&' E1 C' EC . ' C<' CA@' F F6B@<@' 9;<=C' D'<A 1<=' <' C< ' A==< . D6<@' C1=' A; . ' D<611 @' C<' 1= B6A&' A @&' 9 ;' C<' +B;G =<' 9' 1 F;<A=1 ?' 1 &' _E1 C@;<E' 9; . ' GA1 ' A' G ; 1 ' 9' C<' ; G=' ''#C1FC' E<;<' A6;<A@ ' =FA;F<6 ' =B991F1< &' ' =BGG ; ' C1=' D; C<;' ' C<' C; <' ; . ' <I<; ' G 1 ' 9' B; G<&' 9; . ' C<' =C ;<=' 9' C<' F<A ' #B@' C<' <@1 <;;A <A ' ' C =<' 9' C<' (A6 1F&' 1 B . <;AD6<' ; G=' E<;<' C1A;FC<@' BG ' + 6A @&' A @' C<' . G<; ;' ;<= 6I<@' ' =BG<;1 < @' C<1;' C1 I< . < =' C1 . =<69' <' F 91@<@' C1=' ; A6' G E<;=' ' C<' ;FC CA F<66 ;' A . DAFW;]=&' A @&' ' C<' 1 I1 A 1 ' 9' C<' - 1 ?' 9' AP &' C<' =<' B ' # . ' +A;1=' 1 ' A &' &' A @' <= AD61=C<@' C1 . =<69' E1 C' C1=' B; ' A ' 66;<=@< &' B @<;' G;< <P ' 9' A==< . D61 ?' C<' C<;' = I<;<1? =' F ?;<=' 9' #'A' ?;<==&' DB ' 1 ' ;<A61 ' E1 C' C<' GB;G =<' 9' @;AE1 ?' C<A;' ' C1=' A; . ' A @' D<1 ?' 1 ' A' G =1 1 ' ' =B;G;1=J' C<' < < . ' D ' A' d @@<' A AF>' A ' C<' F . . < F< . < ' 9' C<' FA . GA1? ' C<' . G<; ;' 9' B= ;1A&' 61<' - 1 ?' 9'+;B==1A&' A @' . A ' 9' C<' I<;<1? =' 9' B3 G<' E<

8 " > ' " $7 ' : !>' ' 8* -'

' %;<=@< ' ' . << ' AG 6< 'N A @' C< ('A' C<' C<1?C ' 9' C1=' G E<;(' C<' A= <@' F<' . ;<' C<' ;1B . GC' = ' = ;<< ' ' C1=' G;1@<(' 9 ;' C<' =AE' 6B . =<69' =B;; B @<@' D '>1 ?=' A=' C1=' F B; 1<;=(' A @' . A 'F; E <@' C<A@=' D I1 ?' D<9 ;<' C1=' E

AG 6< 'CA@' ;<= 6I<@' ' 'F . . < F<' C<' FA . GA1? ' B 16' C<' . C' 9' SB <(' =1 F<' C<' ;<JB1;<@' C<' 1 <;IA6' 9 ;' C<' GB;G =<' 9' @<F<1I1 ?' _ 6<PA @<;(' A @' D<1 ?' AD6<' 'F; ==' C<' 1< . < ' D<9 ;<' C<' < B6@' D<' G;<0 GA;<@' ';<=1= ' C1 . ' 4 <' =< ' ' CA ' . A;FC(' C; B?C' C1=' A . DA==A@ ;(' ' @<' A;D <(' F 1 BA6' A==B;A F<=' 9' C1=' A . 1FAD6<' 9<<61 ?=' EA;@=' C1 . (' EC16= ' C<' EA=' F = A 6 ' . A>1 ?' C<' . = ' < ; . B=' G;<GA;A 1 =' 9 ;' E3A?1 ?' EA;' A?A1 = ' C1 . ' <' A ' 6< ? C' =BFF<<@<@' K ' A==< . D61 ?' D<C1 @' C<' 1= B6A' C1=' 1 . . < =<' A; . (' F =1= 1 ?' 9' 9 B;' CB @;<@' A @' @>AAB ; J#$+' E< C;<<' C B=A @' . < (' ' 9' EC . ' C;<<' CB @;<@' A . Y1 #7A A' C B=A @' E<;<' 1 9A ; (' =<I< ' C B=A @' C ;=<(' A @' C1; ' 61 B=A @' A; 166<; . < (' AFF . GA 1<@' D ' A' C B=A @' G1<F<=' 9' A; 166<; (' =1P' G ' <JB1GA?<=(' A @' =1' . C3=' G; I1=1 =' C1=' A; . (' F . G =<@' 9' . < ' 9' A6 . = ' A ' C<' A 1 =' 9' B; G<(' ;< FC(' B= ;1A (' +;B==1A (' B; < . D<;?1A (' (AIA;1A (' %B FC(' + 61=C(' A @' A61A (' EA=' @1I1@<@' 1 ' <1?C ' ?;<A ' F ;G=(' A @' =BGG ; <@' D ' E ' CB @;<@' C B=A @' ;<=<; I<' ; G=' EC ' E<;<' @1= ;1DB <@' D< E<< ' C<' 6D<' A @' C<' 1= B6A ' C1=' 9 ; . 1@AD6<' A==< . D61 ?' 9' ; G=' CA@' AC<A@ 'KB= 6 ' A; B=<@' C<' A6A; . ' 9' C<' . G<; ;' S<PA @<;(' A @' E&(' 9 ;<=<<1 ?' C<' @A ?<;' EC1FC' C;<A < <@' C1 . (' 1 ' =G1 <' 9' A66' AG 6< 3=Y' <99 ; =' ' 6B66' C1 . ' 1 'A' @<F<1 9B6' =< =<' 9' =<FB;1 (' C<' 9 ; . <@' A ' A661A F<' E1 C' ?6A @(' 1 ' ;@<;' ';<=1= ' C<' = ; . ';<A@ ' 'DB;= ' BG 'C1=' F B ; ' <' 9 ; . <@' E1 C' ?6A @(' GA1 ' A @' + ; B?A6(' A' <E' F A61 1 (' 1 ' #a1 z11 ; v #<' EC1FC' C<' BFF<<@<@' 1 ' @;AE1 ?' E<@< (' EC1FC' EA ' ' 3 ? I<; <@' 1 ' C<' A . <' 9' CA;6=' : 'D ' C<' <E' +;1 F -@ A6(' (<; A@< <' C<' 6A <;(' EC ' CA@' 6 ?' =1 F<' D<< ' K<A6 B=' A @' C<' =<F;<' < < . ' 9' AG 6< (' F I< <@' ;EA ' EC1FC' EA=' G ==<==<@' D ' %< . A;>(' A ' 6@' A66 ' 9' ;A F<' AG 6< ' CA@' ;<9B=<@' ' AFF<@<' ' (<; A@ <3=' I1<E=' ' C1=' G 1 (' A @' G; I ><@' C1=' ;<=< . < ' ' 6 ' D ' C1=' ;<9B=A6(' DB ' D ' ;<A . < ' EC1FC' EA=' 1 . G;B@< 6 ' @1=@A1 9116 ' A @' D 'G<; . 1 1 ?' A;=CA6' %AI B=' ' < <;' E1 C' C1=' A; . ' B=6AI;9 C' E<@1=C' + . <;A 1A' 6<PA @<;' D A1 <@' C<' E<@1=C' A661A F<' D ' C<' =AF;191F<' 9' ;EA (' A @' F F6B@<@' E1 C

" ^ p ') ! ' 8D6

E<@< ' A ' A661A F<' 99< =1I<' A @' @<9< =1I<&' EC1FC' AG 6< ' A ' 91;=' @<=G1=<@&Q3A @' EC1FC' EA=' 1 ' ;<A61 ' 9A A6' ' C1 .

AG 6< ' E' ' 6 ?<;' F F<A6<@' C1=' C = 16<' @<=1? =&' A @' =< 1 ?' 9 ; C' 9; .' %;<=@< ' 1 ' C<' . C' 9' S; . <&' &' C<' G; F<<@<@' ' C1=' C<A@' JBA; <;=' A ' C . &' 9; .' EC< F<' &C<' @1;<F <@' 61<' . A;FC' 9' C1=' A; . 1<=' BG C<' 1< . < ' (<9 ;<' F; ==1 ?' CA ' ;1I<;' C<' A66<?<@&' A=' A' ;<A= ' 9 ;' C1=' A??13<==1 &' A' ;<F< ' A @' 9 ; . A6' @< . A @' EC1FC' C<' CA@' ;<F<1I<@' 9; .' 6<PA @<;' ' ;< . I<' C<' ;< FC' ; G=' 9; .' <= <; ' + ;B==1A ' <' =G ><' 9' C1=' @< . A @' A=' A ' 1 =B6 ' ' C1=' F; E &' A @' 1 ' EA=' 9 ;' C1=' 911I 6 B=' . 1I<' A @' 9 ;' 6<PA @<;3=' 1 9;AF 1 ' 9' C<' F 1 < A6' D6 F>A@<&' CA ' C<' G6B ?<@' ;A F<' 1 ' A' @1= A ' A @' 9;1?C 9B6' EA;' [' C<' +B==1A =&' C<' =A1@&' [C<' B==1A =' EC .' E<' CAI<' A6EA =' IA JB1=C<@' CAI<' A==B . <@' C<' <' 9' F JB<; ;=&' A @' G; I ><' B=' ' C<' F 961F ' ' ' 6<' B=' AFF<G ' C1=' 1 . G<; 1 < F<' A=' A' 9AI B;' A @' F; ==' C<' 1< . < ~' ' ' C<' @' SB <&' 1 ' A' G; F6A . A 1 ' ' C1=' A; . &' C<' =G ><' 9' A' = A <' EC1FC' CA@' D<< ' D6 <@' 9; .' C<' . AG' 9' B; G<&' 9 ;' C<' CA@' G; I<@' C<' F B;A?<' 9' C<' G< G6<' 9' CA ' F B ; &' A @' C<' ;<JB1;<@' C< .' A=' A ' A@IA F<@' ?BA;@' A @' A' DA;;1<;' A?A1 =' F 6 ==A6' B==1A ' [' 6@1<;=' z~' C<' =A1@&' [C<' =<F @' + 61=C' EA;' CA=' F . . < F<@' C<' 91;=' EA=' D; B?C ' ' A' F6 =<' A ' ;1<@6A @' A @' 16=1 ' B==1A' CA=' =E ; ' A ' < <; A6' A661A F<' E1 C' ;A F<' A @' EA;' ' C<' @<A C' A?A1 =' ?6A @N A @' E' =C<' CA=' I1 6A <@' D C' C =<' A C=' ' ' ' B==1A'1=' 1 ' C<' 16=' 9'= . <' 9A A61 &' A @' C<;' @<= 1 ' . B=' D<' AFF . G61=C<@ ~' ' EA=' ' AG 6< ' ;A C<;' CA ' ' C<' B==1A =' CA ' C<=<' E ;@=' E<;<' AGG61FAD6<N C<' EA=' D61 @<@' D '= . <' 9A A61 &' A @' C<' 3A=' 6<@' D ' 1 ' ' C<' 9 @916 . < ' 9' C1=' @<= 1

' C<' 7 C' SB <&' C<' . G<; ;' F . . < F<@' C<' FA . GA1? ' A ' C<' 61<A@' 9' 9 B;' CB @;<@' C B=A @' = 6@1<;=' <' F; ==<@' C<' FA . GA1? ' 9 1< . < ' E1 C' C<' 6A;?<;' G ; 1 ' 9' C1=' 9 ;F<=&' A @' ' C<' C' C<' < <;<@' 16 A&' EC<;<' C<' ;<F<1I<@' A' 91 A6' 6< <;' 9; .' 6<PA @<;' =B??<= 1 ?' G<AF<&' A @' G; . 1=1 ?' ' F 1 B<' C1=' A661A F<' E1 C' ;A F<' 19' AG 6< ' E B6@' <IAFBA <' C<' B==1A ' <;;1 ;1<=' (B ' ' CAI<' ;< ;<A <@' !' = <G' E B6@' CAI<' D<< ' A' CB . 161A 1 ' 1 ' C<' < <=' 9' AG 6< ' <' =< ' A' ;<G6 ' 1 ' C<' <?A 1I<' A @' CA6 <@' =<I< << ' @A =' A ' 16 A , A' @<6A ' #IC1FC' EA=' 9A A6

' C<' . <A 1 . <' C<' %1<' ' 9' C<' %BFC ' 9' A;=AE' G; F6A1 . <@' C<' ;<0 <= AD61=C . < ' A @' 9;<<@ .' 9' + 6A @' =' A' A 1 ' ' @<GB A 1 ' =< '

2 ' !' ' !' > + ' ' ' ' @

61<' . G<; ;'< ;<A <@' C1 . ' '@<F6A;<' CA ' + 6A @' <P1= <@'N A @' AG 6< ' C<=1 A <@' 'AFF<@<' ' C<' ;<JB<= (' 9 ;' A' G ; 1 ' 9' C<' 6@' +@61=C' G; 0 I1 F<=('EA=' 1 F ;G ;A <@' E1 C ' B= ;1A' A @' +;B==1A(' A @' A ' C1=' 1 . <' '' B= ;1A' A @' +;B==1A' E<;<' C<' A661<=' 9' ;A F<' ';<F ? 1=<' C<' <P1= < F<' A @' 1 @<G< @< F<' 9' C<' + 61=C' A 1 'E B6@'D<'' '=G;<A@' C<' 91;<' 9' 1 0 =B;;<F 1 ' C; B?C B ' C<' 1 F ;G ;A <@' G; I1 F<=' ' A' 6A <;' G<;1 @(' G<;CAG=(' C<' . 1?C ' AFF<@<' ' C<' E1=C<=' 9' C<' %1< (' DB ' I 'G;<=< '1 ' EA=' C1=' @B ' '@<F61 <' '@ ' = (' A @' C<' ?AI<' C1=' A =E<;'1 ' =BFC' A' . A <;' A=' ' ' 99< @' C1=' A661<=

C<' . G<; ;' F 1 B<@' C1=' . A;FC(' A @' A;;1I<@' A ' 1 <G=>' A9 <;' A' =<;1<=' 9' ?6 ;1 B=' F 961F =' C<' < < . 3=' A; . ';< 1;<@' D<9 ;<' C1 . (' 61 @<;' C<' F . . A @' 9' (A?;A 1 ' A @' (A;F6A ' @<' 66 N' C<' % 1<G<;' EA=' =G<<@16 ' F; ==<@(' A @' A' D6 @ ' DA 6<' >' G6AF<' A ' - ;A= w(' D<9 ;<' . 6< =>(' EC1FC' EA=' FA;;1<@' A9 <;' A' . B;@<; B=' F 961F (' A @' @<61I<;<@' ' C<' 96A . <=' C<' B==1A =' = 166' 9<66' DAF>(' A @' AG 6< '9 66 E<@' C< . ' 1 ' C<' @1;<F 1 ' 9' =F E ' C<' G6A1 =' 9' A6 B 1 A(' O ; @;<M A&(' A @' + 6 M>' E<;<' C<' =F< <=' 9' @<=G<;A <' F . DA =(' 1 ' EC1FC' C<' ;< FC'' A; . =' E<;<' ;1B . GCA N' DB ' C<' B==1A =' @<F61 <@' A ' @<F1=1I<' DA 6<(' A @(' ;< ;<A 1 ?' A9 <;'<AFC' @<9<A (' 6<@' C<' ;< FC' ; G=(' 'ah;C'GB;=B<@' C< . ' 1 ' C<' C<A; ' 9' 6@' B==1A

C<' A; . 'A;;1I<@' A ' 6< ? C&(' ' C<' 7 C' <G < . D<;(' ' C<' G6A1 =' 9' (; @1 (' = . <' 6<A?B<=' @1= A ' 91) .' =F E(' <A;' C<' DA >=' 9' C<' =>IA(' A @' 9 B @' 1 =<69' 9AF<' ' 9AF<' E1 C' C<' EC 6<' B==1A ' A; . (' EC1FC' EA=' B @<;' C<' F . . A @' 9' C<' 6@' ?< <;A6' - B B= 9 ' ' ?< <;A6' (A 6<' 9' C<' < ?A?< . < 'EA=';<= 6I<@' ' 9 ;' C<' @A ' A9 <;' C<' . ;; E(A>;A ' . ; 1 ?' 9' CA ' . < . ;AD6<' @A (AG 6< (1==B1 ?' 9; .' C1=' < (' =A1@' 'C1=' 991F<;= , [' <<' ECA 'A' 91 <' =B ' E<' CAI<' ' '1=' C<' =B ' 9' B= <;61 M'z`' C< (' 1 ' A ' A@@;<==' ' C1=' = 6@1<;=(' C<' =A1@' ' C< . , [' '6< ? C' B' E166' 91?C ' C<' DA 6<' B' CAI<' = ' 6 ?<@' 9 ;' ź (<CAI<' A=(B' @1@' A ' B= <;61 M(' A ' ;1<@6A @(' A ' 1 <G=>(' . 6< =>(' A @' C<' . = ' @1= A ' A?<=' E166' =G<A>' E1 C' A@ . 1;A 1 ' 9' B;' F @BF '1 ' C1=' DA 6<' ' <'1 'D<' =A1@' E1 C' G;1@<' 9' <AFC' 9' B , <' EA=' A ' CA ' ?;<A ' DA 6<' ' C<' G6A1 =' 9' =F E' 3`' C<' AF 1 'F . . < F<@' A6 . = '1 . . <0 @1A <6 (' A @' EA=' <;;191F ' < (' B;A (' B?< <(' %AI B= (' OW;A;@(' A @' + 1A E=>1' @1@' @<<@=' 9' C<' B . = 'C<; 1= . ' B?B= <' AXP1A1 F 9B ' EA=' = ;BF>'@ E 'EC16= 'FCA;?1 ?' A';<@ BD 'A ' C<' C<A@' 9' C1=' FB1;A==1<;=' C<

B==1A =' 1<6@<@' A ' 6< ? C@ A9 <;' A' @<=G<;A <' F 961F ' AG 6< ' C<6@' DAF>' C1=' ?BA;@@ A @' A66 E<@' C<' B==1A =@ EC .' C<' . 1?C ' CAI<' F;B=C<@@ ' <=FAG<' E< ;9;II ' C B=A @' ;< FC' A @' 919 ' C B=A @' B==1A =' E<;<' C166<@' ;' E B @<@'1 ' C1=' DA 6<@ A @' A' ?;<A ' B . D<;' 9' ?< <;A6=' G<;1=C<@' ' C<' 91<6@' (B ' C<' I1F ; 'EA=' ' C<' =1@<' 9' C<' ;< FC@ A @' A;WCA6 < ' EA=' F;<A <@' +;1 F<' 9' =>IA' ' C<' 91<6@' 9' DA 6<' C<;' DA 6<' >' G6AF<' A ' KA1'=>@ CA69' A' 6<A?B<' 9; .' =F E@ 1 ' EC1FC' C< B==1A =' E<;<' A?A1 ' IA JB1=C<@@ A @' C<1;' A; . ' 6 '< <;<@' CA ' A F1< ' FAG1 A6' 1 . . <@1A <6 ' ' <IAFBA <' 1 ' ; .' C<' C<1?C =' 9' 1 . ' A6B @ EC1FC' F . . A @' =F E@ C<' ;< FC' D<C<6@' 961A '9A . B=' F1 @ CA69' =1A 1F@ CA69' B; G<A @ E1 C' '1 =' <1?C ' CB @;<@' FCB;FC<=@ 1 =' C B=A @' D< E<;=@ _A @1 =' ?16@<@' FBG 6A=' ? 9<;1 ?' 1 ' C<' =B ' ' C1=' =G<F AF6<' C<' ;< FC' ; G=' E<;<' 9166<@' E1 C' A= 1=C . < 'A @' A@ . 1;A 1 ' =F E' ' =F E' C< ' F;1<@@ A @' 9 ;' A' . . < ' AG 6< ' K 1 <@' 1 ' C1=' < CB=1A= . N A' '?6<A .' 9' K '166B . 1 <@' C1=' F B < A F<@ A @' A' F; ' 9' CAGG1 <==' <=FAG<@' C1=' 61G=' =F E' C<' ;<EA;@' 9 ;' = ' . A '?6 ;1 B=" <99 ; =@ C<' < @' 9' B' . A ' 16=' 9 <;' A' 1 . <' C<' ;< FC' < <;<@' C<' =16< ' +<7K'B3'<M@' = ;<< =' 9' C1=' IA=' F16 @ A @' E<;<' A= 1=C<@' ' 91 @' C< .' 1+?($2 :" <;6 ' @<=<; <@' C<' 1 CAD1 A =' CA@' JB1 <@' 1 '1 ' A' D @ ' mm#AG 6< '< <;<@' C<' F1 A@<6' 9' C<' - ;< . 61 ' B ;<=1= <@' <' CA@' D<61<I<@' CA ' =F E' E B6@' D<' C<' <; .' 9' C1=' 6AD B;=@ A @' 9' C<' =B99<;1 ?=' 9' C1=' # . ' ' F A1 <@' ?;<A ' = ;<=@ A @' C<' ;<= 6I<@' ' <= AD61=C' C1=' E1 <;' '6BA; <;=' C<;<@ A @' < K ' 61<' 9;B1 =' 9' C1=' I1F ; ' (B ' @B;1 ?' C<' 1?C ' # 9;1?C 9B6' F 96A?;A 1 ' DB;=' 9 ; C' = GFC1 @ C<' (B; 1 ?' 9 ? I<; ;' 9' C<' F1 @ CA@' @< <; . 1 <@@ EC< ' C<' <IAFBA <@' =F E ' . A><' A' ?;<A ' =AF;191F<' 9 ;' C<' GB;G =<' 9' =AI1 ?' C1=' F B ; ' B==1A' D1B=' D<' 6 =' 19' C<' ;< FC' F B6@' 91 @' A' ;<9B?<' 1 ' =F E@ A @' A ' A' ?1I< ' 1? A6@ C<;<9 ;<@ F I1F =' E<;<' =< ' C; B?C B ' C<' F1 @ ;FC' 1 ' CA @@ '91;<' 1 '1 ' A' C B=A @' G6AF<=' =F E' F;B . D6<@' D< <A C' C<' 96A . <=@ A @ '' A=:=G<<@16 ' C1 ?' DB ' A' C<AG' 9' A=C<= C<' E1 <;' AGG; AFC<@@ A @' C<' ;< FC' CA@' ' A= 6B .' A?A1 =' 1 =' I1? B;=' AG 6< ' = 166' 96A <;<@' C1 . =<69' E1 C' C G<=' 9' G<AF<' 6<P0 A @<;' @<=1? <@6 ' G; 6 ?<@' C<' <? 1A 1 =' EC1FC' E<;<' < <;<@' BG ' ' 1C' C1=' DK<F @ A @' 1 ' C<' . <A 1 . <' =1? <@' A' ;<A ' E1 C' B6 A ' AC . B@@ C<' =BFF<== ;' 9' <61 . @ EC 'CA@' D<< ' =6A1 ' D ' C<' SA 1==A;1<=@ C1FC' A==B;<@' C1 .' C<' =BGG ;' 9' C<' EC 6<' B==1A ' A; . ' A?A1 =' AG

F C< <? 1A 1 =E<;<A 6< ? C D; >< A @ AG 6< ;@<;<@ C<;<;<A # ;< ;<A JB1 1 ?C< F1 A C< 61<A@ 9 AH CB @;<@ % # C B=A @ ; G= A9 <;A B=<6<==@<6A 9 9 ; @A = [B;A AF>1=A A < @ =A1@ 6@ O< <;A6 - B B= 9 C< ;< FC [A @ E 1;=E166 D<?1 1=A; . 1 <;F<G <@ C< 6@ - A6 B?A 1# B EA;@= EC1FC AG 6< @1;<F <@ C1= . A;FC A @ 91I<@A =A9 <;C<IAFBA 1 9 =F E C< 7 C 9 F D<; C< 9 B?C E1 C C< ;< FC A A6 KA ; =6AE< M A DA 6< M$?M EA= I<; D6 @ A @ I<; 1 @<F1=1I< A @ A C< F6 =< 9 EC1FC C< . G<; ; EA= <A;6 A>< D A DA @ 9 =0 =AF>= 1 C< . 1@= 9 C1= = A99 Y =<F @ DA 6< E B6@ CAI< D<< <F<==A; G< C< ; A@ - A6 B?A A @ AG 6< EA= 1 F61 <@ 91?C 1 N DB 1<6@1 ? C< A@I1F< 9 C1= ?< <;A6= C< @1;<F <@ C< ;< ;<A EA;@= . 6< => C< E1 <; =B@@< 6 FA . < E1 C A ;1? ;B EC1FC EA= I<; B F . . <I< 1 1 C< C<A; 9 B==1A N A @ C< ;< FC ; G= GA;A6 =<@ E1 C F 6@ E<;< GB;=B<@ A @ CA;A==<@ 1 C<1; ;< ;<A D 1 B0 . <;AD6< < < . 1<= A @ F I<;<@ C< 61 < 9 . A;FC E1 C C<1; 9; M< F ;G=<=

E<I<; C< A; . F 1 B<@ 1 = . A;FC 1 6<;AD6 ? @ ;@<; A 9 A= =A? < C< 9A; A= 61< (<;<=1 A EC1FC 1 CA@ F; = 1 C< 9AF< 9 (<;<. A - B B= 9 1 ?< = <1 A @ FC1 FCA? 9 A @ C<1; C;<< A; . 1<= EC1FC FFBG1<@ A @ DA; ;<@ A66 C< 9 ;@= C< ;1I<; EA= 6 GA; 6 9; M< A @ EA= 9166<@ E1 C 6A;?< . A==<= 9 @;19 1 ?1F<N A @ 1 EA <F<==A; DB16@ D;1@?<= B @<; C< < <. 3 91;< A @ 91?C 1 F<=0 =A 6 1F ;YA @ B@1 G; <F <@ C< GA==A?< 9 C< A; . A @ = 166 G<;9 ; . <@ G; @1?1<= 9 IA6 B; N DB C< ;< FC ; G= 1 9<;1 ; 1 . ; . D<; ?AI< EA C< ;1?C DA > D<9 ;< C< A; . F . . A @<@ D 1 ?< = <1 EC16= A B==1A DA <; G6A <@ BG C< D;1@?<= A @ G< <@ A FCA= . 1 C< F . GA] . A== 9 = ;A??6<;= A @ B A; . <@ E;< FC<= EC D6 F><@ BG C< EA 1F ; =BFF<<@<@ A 6< ? C 1 @;1I1 ? C1= <;;1D6< DA <; DAF> DB EA= C1 . =<69 =B;; B @<@ <I<; =1@< A @ A6 . = F;B=C<@ EC< B; 1<; A @ A B; ABD B;? A@IA F<@ A C< C<A@ 9 C< FAIA6; A @ D;<A>1 ? C; B?C C< < . 3 F< ;< =< 1F c 9;<< C< D;1@?<= C E<I<; E<; D= ;BF <@ D A 1 B . <;AD6< B . D<; 9 = 6@1<; = 9 <I<; A; . @ A @ A 1 . . < =< JBA 1 9 DA??A?<

% 3<@7 <M$A $+?$C@+< $+ B7C@7 <B @A?>L@ <M@ ; $A3B7<D+@ B3 3>##$+ >#$G@ $+<B <M@ M>+CA B3 <M@ DAA$B+A >LB#@B+ ?B+A<>+<#K ?>77$@C >JBD< S$<M M$; >+ >?<$G@ LB$AB+ @+?#BA@C $+ > 7$+

" : ^ + + %' 0 ' ' + 0 & 2 .

A @& D;<A>1 ?' @ E & G6B ?<@' C B=A @=' 9' . < ' 1 ' C< (<;<=1 A& ' 6< ? C& A9 G;'1 F;<@1D6< <99 ; =& C< A; . 'F; ==<@' C1='9 ; . 1@AD6< DA;;1<;'N CB ' C< . ;A6 < <;? ' 9' C< ?;<A <;' 1 . D<;' 9' C< ;< FC' ; G=' EA=' @<= ; <@& A @' C< ;< ;<A 'D<FA . < < IA='A @'9<A;1B6 ; B +A;1=' CA@' E' D<< ' < A @ E< '@A =' E1 C B ' <E=' 9' C< . G<; ;' >+C' C< 0 ;A @' ; . & A @' A' G 61 1FA6 G;1= <;' 0< <;A6 A66< & =BGG =1 ?' CA ' AG 6< ' EA=' @<A@& CA@' <11;6 ' A11 &1 '+A;1=& =BFF<<@<@' 1 ' =BG<;=<@1 ?' C1=' 0 I<; . < ' D ' A' - ' C< . G<; ;' G<;F<1I<@' CA ' C1=' G;<=< F< EA=' <F<==A; ' 1 ' +A;1=& 9 ;' C< GB;0 G =< 9' @<9<A 1 ?' =BFC' G6 =' A @' G; FB;1 ?' 9;<=C' . 161 A; ' ;<= B;F<=' ' C< C' %<F< . D<;' C< 6<9 ' C1=' B 9 ; B A < A; . & EC1FC' C< CA@' G6AF<@ @<;' K C< F . . A @' 9' C< - 1 ?' 9' AG6<=& A @' EC1FC' A;=CA6 < ' < @<AI . 3<@' ' ;<A 1 . A < D ' C1=' C<; 1F' <PA . G6<& <PG =1 ?' C1=' 619< ' <I<; ' FFA=1 & E' A=' A' G;1IA < = 6@1<;& A @' E' A=' A' ?< <;A6 ! C< ;<I<;=<=' =B99<;<@' D ' C< ;< FC' A; . 'E<;< 9 66 E<@' D ' @<=<; 1 = mC <' +;B==1A =& EC ' F I<;<@' C< ;1?C ' 9' C< ;< FC' A; . & ADA @ <@' AF@ A6@' A ' 16=1 'N A @' C< B= ;1A =& F . ' 9 A @<@' D ' FCEA; M< D<;?& 9 66 E<@' C1=' <PA . G6<& 6<AI1 ? G< ' B;' 6<9 & EC = ' B;A & C< . . A @<; 1 C1<9& ADA @ <@' C1=' G = A @' @<=<; <@' ' ' B?< < >' C< F . . A @' A @' ;<<= AD61=C<@' ;@<; ';A F< . A@<' A' =BG;< . < <99 ; & A @& A 1F1GA 1 ?' D 'A' <A;' C< 6<?A6 A?< 9 ;' C< F =F;1G 1 & ?AI<' A' <E' A; . ' ' AG 6< & EC ' . A;FC<@' 1I1 C' 1 & ' . << ' B?< <' B= ;1A& =<1M<@' E1 C' 9<A;& ;< <E<@' 1 =' G; <= A 1 =' 9 91@<61 & EC16=' +;B==1A' <? 1A <@' E1 C' B==1A' A ' - A61=FC#' A @' ?6A @ G; . 1=1 ?' ;EA ' ' E<@< & D A1 <@' C< AF 1I<' F G<;A 1 ' 9 1<; A@ <' A?A1 =' ;A F<' AG 6< & E' C;<A < <@' 1 HI<; '@1;<F 1 & ;<K 1 <@' A ' B M< & ' C< 8" C' G;16& 8& 1; A<; . A%%1#A"Y m6B?< <' A @' C< ;< . A1 =' 9' C< 0 ;A @' ; . & A @' ?A1 <@ 1 C' F =F;1G =' A?A1 =' C<I< <;A ' ; G=' 9' B; G< C<D;1661A 'I1F ;1<= Yn9 B M< & (AB M< & A @' B;=FC< ' <' C< ';< <E<@' C1=' <? 1A 1 =' 9 ; #<AF<' ' EA=' A;;A ?<@' CA 'A' ?;<==' =C B6@' . << ' A ' +;A?B< ' C< C %&9 S1 . <& A @' AG 6< 'AFF<G <@' C< . <@1A 1 ' 9' B= ;1A& EC ' @< . A @<@ =' C< G;1F< 9' C<;' A661A F< CA ' AG 6< ' =C B6@' F<@< ' C<; 61< 66 ;1A 'G; I1 F<='N CA ' C< @BFC ' 9' A;=AE' =C B6@' F #;A=A D< D; >< ' BG' A @' @1I1@<@' D< E<< ' B==1A& B= ;1A& A @ +;B==1A'N CA ' C< >1 ?@ .' 9' +;B==1A' =C B6@' D< ;<F = ;BF <@' E1 C' A < AD6< 9; 1<;' ' C< 6D<'N CA ' C< 1 @<G< @< F< 9' 0<; . A ' =C B6@ ' + ' ?' ?

8 * ' ' ! /' - 8 ' : !>' ' 8 * '

D<' ;<= ;<@' D ' C<' AD 61 1 ' 9' C<' 9<@<;A 1 ' 9' C<' C1 <' A @' CA '
C<' F1 1<=' 9' A . DB;?' A @' rD<F>' =C B6@' D<' ;<<= AD61=C<@' A=' 9;<<'
A =<A 1F' E =' C<=<' F @1 1 =' E<;<' G; G =<@' D ' ' < <; 1FC' '
C<' . G<; ;' 1 ' A' F<6<D;A <@' 1 <; I1<E' A @' A6 6K B?C' C< ' @<G;1I<@'
AG 6< '=' FA;F<6 ' A C1 ?' AG 6< 3=' G;1@<' . A@<' C1 .
C<=1 A 1 ' C<=1 A <' ' AFF<G ' C< . ' A @' C1=' C<=1 A 1 ' EA=' 9A A ' C<'
?;<=='EA=' =B@@< 6 ' @1== 6I<@' E1 C B ' A ' ;<=B6 ' A @' # ;1A' @<F6A;<@'
%1=A 1 1 ' 9' A?A1 = ' ;A F<' C<' A661<=' CA@' 91I<' CB @;<@' C B=A @'
C<' ?;<=='; +' B @<;' FCEA; M< D<;?' (6BFC<;' A @' (<; A@ <' C<'
+;1 F<' A6' 9' E<@< ' EC16=' AG 6< 'CA@' 6 ' C;<<' CB @;<@' C B=A @'
@1I1@<@' 1 '<6<I< 'F ;G=' . @<;' A @A . . <' 1F ;' (<; ;A @' < ' AB;1'
= ' A; . ' < 1<;' + 1A E=>1' AF@ A6@' B@1 ' A @' A1 '
;N' C<' FAIA6; ' EA=' F . . A @<@' D ' C<' - 1 ?' 9' AG6<=' A B; '
ABD B;?' <DA= 1A 1' A @' - <66<; . A N' A @' ; 1<;' A @' AB= B ' 6<@'
C<' ?BA;@ ' C<=< ' 9 ;F<=' E<;<' C<' 6A= ' C G<' 9 ' ;A F<' C<;<I<1'
AG 6< ' 9 B?C ' 1 ' G<;= ' C<' EA=' I1F ;1 B=' <' 9 B?C ' C<' < < . '
. @<;' C<' EA66=' 9' %;<=@< ' A @' EA=' I1F ;1 B=N' DB ' A @A# . '
(A 6<' 9' =B= A1 <@' A' <; ;1D6<' FC<F>' A ' - B6< . ' EC<;<' C<' EA='
%;<=@< ' . A@<' G;1= <;' A @' 6 =' < ' C B=A @' . < ' C<' C;<<'
= I<;<1? =' 6<PA @<;' ;A F1=' A @' ;<@<;1F>' 1661A . ' <? 1A <@' A '
<G61 M' A' ;1G6<' A661A F<' C<' A661<@' A; . 1<=' ?;<E' 6A;?<;' @A ' D ' @A H'
A @' . A ' F 961F =' >' G6AF<' D< E<< ' B <JBA6' 9 ;F<=' B@1 ' EA '
<I<;=<=' 9' C<' A JB1=C<@' A ' 0 ; =D<;< ' < ' A '%< <E1 M' AF@ A6@' A
#d [vC' [[H ' - A MDAFC ' C<' - 1 ?' 9' (AIA;1A' @<F6A;<@' EA;' A?A1 = '
AG 6< ' A @' C<' ;< FC' ; G=' =B;; B @<@' ' A66' =1@<=' ;< ;<A <@' '
<1G=1F ' C<' . G<; ;' E' =B99<;<@' C<' F =<JB< F<=' 9' C1=' = = < . ' 9'
GG;<==1 ' B; G<' EC1FC' 9 ;' = . <' 1 . <' CA@' D<< ' D E<@' 1 ' C<' @B= '
D<9 ;<' C1 . ' E' ; =<' ' 'A @' G;<GA;<@' ' F;B=C' C1 . ' ' <; ;1D6<'
DA 6<' EC1FC' 6A= <@' E ' @A =' A @' EA=' C<' ?;<A <= 'A @' . = '
<1G=1<' <; ;1 ' . . 3@<; B=' 9' C<' A?<' >' G6AF<' B @<;' C<' EA66=' 9' <1G=1F '
' CB @;<@' A @' C1; ' C B=A @' ;< FC' = ;B??6<@' A?A1 = '
C;<<' CB @;<@' C B=A @' < < . 1<=' A @' 61< ' E<;<' ADA @ <@' D ' C<'
AP =' EC =<' 6@' - 1 ?' A6 <' ;< . A1 <@' 9A1 C911' ' ;A F<' C1=' @<9<F0
1 ' F . G; . 1=<@' C<' =A9< ' 9' C<' A; . ' A @' AG 6< ' ;@<;<@' A'
;< ;<A ' EC1FC' EA=' <99<F <@' D ' C<' 6 ' D;1@?<' I<;' C<' 6= <;' B@0
@< 6 ' 1 ' AFF ;@A F<' E1 C' A ' ;@<;' EC1FC' EA=' 166' B @<;= @' A @' '
G; . G 6 ' <P<FB <@' C<' D;1@?<' EA=' D6 E ' BG' D<9 ;<' C<' A; . ' CA@' EC 66

" ^ ' ' ')'

GA==<@ I<;(A @ C1=' @1=A= <;' @<F1@<@ C<' 9A <' 9' C<' FA . GA1? ' 19 '
C B=A @'B1< ' CA@' G<;1=C<@ ' '<1 C<;'=1@<' 1 '1 =' 9;1?C 9B6 DA 6<=' E< '
C B=A @' ;< FC' E<;<' A>< ' G;1= <;='1 ' F =<JB< F<' 9' C<' @<= ;BF 1 '
9' C<' 6= <;' D;1@?<(E ' CB @;<@' G1<F<=' 9' A; 166<; ' A @' A ' 1 . . < =<'
A . B ' 9' DA??A?<' 9<66 1 ' C<' CA @=' 9' C<' A661<=(A @' A' . B6 1 B@<' 9'
D;AI<' . < (1 F6B@1 ?' C<' C<; 1F' + 1A E=> (E<;<' @; E <@
AG 6< ';< ;<A <@'BG ' C<' C1 <(F6 =<' G;<==<@' D ' C<' A661<@'A; . 1<=' '
F ;G=' 9' =1P ' C B=A @' B= ;1A =' A @' (AIA;1A =(B @<;' 0< <;A6 ;<@<(
< @<AI B;<@' <A;' A AB' '1 <;F<G ' C<' ;< FC' ;< ;<A (DB '
AG 6< ' D A1 <@' A' ?6 ;1 B=' I1F ; (@1=G<;=<@' C<' < < . (Y' A AB'
A @' < FA . G<@' C1=' A; . ' ' C<' C1 <(Y' EC16=' C<' A661<=' >'BG'A' G =1 1 '
GG =1 <' 'C1 . (A @' =<6<F <@' ;A >9 ; 'A=' C<1;' C<A@ JBA; <;=
GA1 ' =C >' 99' C<' ;B6<' 9' ;A F<' E ' ?;<A ' DA 6<=' 6 = ' C<;<'
D ' C<' 6A <;(;AG16<=' a A6A . A FAb' D ' A; . (1 ' (A @' 1 ;1A'
D ' - 1 ?' S =<GC(1 ' 8(< AD6<@' <661 ? ' ' . A;FC' .1=
A ' C<' C<A@' 9' A' CB @;<@' C B=A @' ?61=C(+ ; B?B<=<(
A @' GA 1A;@=' ' C<' <= <; ' + ;< <<=(EC<;<' B6 (A9 <;'
CAI1 ?' = ;B??6<@' ?6 ;1 B=6 '1 ' C<' +< 1 =B6A' E1 C' I<; ' B <JBA6 9 ;F<=(
B6@' E' 6 ' GG =<' ' C<' < < . '919 (C B=A @' ; G=(EC ' E<;<' ;1<@'
< <;A =' 1 @<<@(DB ' E ; ' B ' D ' F 1 B<@' ;<I<;=<=' BFC< (E1 C'
E< 91I<' C B=A @' . < ' 9' C<' A; . ' 9' ;A? (@<9< @<@' C<' A= <; '
+ ;< <<=' A?A1 = '9 ;F<=' C;<<' 1 . <=' =BG<;1 ;
' C<' < @' 9' 8' C<' EC 6<' 9' GA1 ' EA=' 6 = ' ' ;A F<(E1 C' C<'
<PF<G 1 ' 9' A' 9<E' G6AF<=' EC1FC' E<;<' = 1 'C<6@' D ' ;< FC' ?A;;1= =(A @'
S =<GC' (AGA; <' EA=' A' - 1 ?' 6 '1 ' A . <' ' C1=' <P ;< . 1 ' AG 6< '
@1@' 'C<=1 A <' '=AF;191F<' C1=' D; C<;3=' F; E (EC1FC' CA@' D<< ' AFJB1;<@'
D '= ' . BFC' 1 KB= 1F<' A @' D6 @=C<@(A @' 1 ' C<' 9A1 ' C G<9' 9' A; ;<= 1 ?'
C<' G; ?;<==' 9' C<' ?6 GA 1=C' A; . 'A ' C<' + ;< <<=(C<' ;<A ' 9'
< ?A?<@(D ' A' ;<A '=1? <@' A ' A6< 9A (EC<;<' C<' = 1 '><G ' A6< A '
- 1 ?' <;@1 A @' FAG 1I<(' AF> E6<@?<' C1 . 'A=' - 1 ?' 9' GA1 ' A @' C<

' 4' >LB#@B+'7@<7@><@C' DLB+' <M@' M$+@' S$<M' 3B7<K' <MBDA>+C' >7 ; @C' >+C' A$N<K' <MBDA>+C'
<$+>7 ; @C' ; @+ '#@>G$+ ' B+' <M@' $A<D#>' '<M@' C@7 ' >+C' <M@' #J@ ' >' MD+C7@C' >+C' A$N<K' <MBD1
A>+C' 7@+?M ; @+ ' SMB' S@7@' ?B+C@ ; +@C' < ' C@3@+C' 3B7@$ +' S>##A' SM$#A<' <M@' S>##>' B3' <M@$7'
BD+<7K' S@7@' +B' #B+ @7' C@3@+C@C' JD<' JK' <M@' S@>Q' >7 ; A' B3 'KBD<M' >+C' B#C' > @
' L>$+' >+C' + #>+C' J@$+ ' >##$@C' <B' @>?M' B<M@7' ?BD#C' B+#K' <7@><' $+' ?B+?@7<' >+C' $<'
>A'G@7K'$; L7BJ>J#@' <M><' <M@' + #$AM' ! BG@7+ ; @+<' >+C' <M@' L>+$AM' @ @+?K' SBD#C' 7@1
+BD+?@<M@' >CG>+<> @A' <M@K'M>C' >$+@C' B+' >??BD+<' B3' >' <7@><K' @N<B7<@C' 37B ; ' >' ?>L<$G@'
L7$+?@

' '

8 ' ; ! @ !' % ; ' 5' + ' ' ' '

@1<=&A @' ' G< ' C<' @ ;=' 9'C1=' G;1= ' A=' = ' A=' C<' ;<A ' =C B 'D<' AFF<G <@' D ' C<" <?< F ' A ' A@1M' A @' C<' ; <=' #

+;1 F<' B?< <&9A1 C9B6" ' ;A F<' A @' ' . 1=9 ; B <&Y' = 166" = ;B??6<@' A &

A? 191F< '@d' G<;1 @' 1 ' A6 &Y'A @' C<; 1FA66 ' @<9< @<@' C<' F B;=<' 9

Y `6<' @1?<' D Y' yf1?<' 2 6hB ' C9=' A; . ' EA=' ;<@BF<@' ' C1; =1P' C B=A @'

+;1 F<' B?< <& . < & EC16= ' A' CB @;<@' C B=A @' B= ;1A =' A @' 0<; . 1 . =' G B;<@' @ E ' BKG ' A6 & A @' C<' E<A>' B;A & ' =AI<' C1=' F; E & @<F6A;<@' A?A1 = ' AG 6<

;A F<' E' 9 B @' 1 =<69' C;<A < <@' ' C<' ; C' A @' C<' <A= ' E1 C' 1 0

IA=1 ' 9'1 =' A F1< 'D B @A;1<=&KB= ' A=' 1 ' CA@' D<< '1 ' 2 !

7 @L#B7>J#@' ?B+0' ' ' : ' (B '1 =' G GB6A 1 'EA=' '6 ?<;'1 =G1;<@'D ' CA '< CB=1A= 1F'

=G1;1 ' EC1FC& < AD6<@' 1 ' ' ><<G' 1 =' <;;1 ;1<=' =AF;<@& A @'

A6;<A@ ' C =<' EC ' CA@' AGG6AB@<@' ;' F =< <@' ' C<' . G<; ;3=' <6<IA 1 '

C<6@' A6 9'9; .' C1 . ' C<' F<6<D;A <@' C1= ;1A ' = 'D9 < ' JB <@& @<=F;1D<=' 1 ' C<' 9 66 E1 ?' <; . =' C<' =1 BA 1 ' 9' C<' F B ; ' A ' C1=' B 9 ; B A <' G<;1 @ ' [' ;A F<&~ C<' =A =& [' EC1FC' CA@' D<< ' @1=?B= <@' E1 C' 61D<; ' D ' < ' <A;=' 9' ;<I 6B 1 & EA=' E' @1=?B= <@' E1 C' @<=G 1= . ' D ' 919 << ' <A;=' 9' A' . 161 A; ' ? I<; . < & A @' C<' <99B=1 ' 9' D6 @' 9; .' <' < @' 9' B; G<' ' A C<; ' C<' I1 6< F<' 9' C<' G;<9<F =' <A;1 ?' AEA ' C<' FC16@;< ' 9' C<' G< G6<' 9 ;' C<' F =F;1G 1 & A @' C =<' 9' C<' C1?C<;' F6A==<=' 9 ;' C<' ?BA;@=' 9' C B;& ; B;1 ?& D ' . <A =' 9' C<' !' C<' 9A . 161<=' EC =<' = d

@1@' ' K 1 ' C<1;' ;<?1 . < =& < . G6 1 ?' . I<AD6<' F 6B . =' A?A1 = ' C<'

;<9;AF ; ' F =F;1G =& 9 < ' ;<A 1 ?' C<' ;< FC' G; I1 F<=' A=' C B?C' C< '

CA@' D<< ' F JB<;<@' G; I1 F<=& F I<; 1 ?' G;< < @<@' I 6B A; ' ?19 =' 1 '

F . GB6= ; '1 . G = =& A @' =<1M1 ?' D ' . <A =' 9' ;<JB1=1 1 =& 9 ;A?<& C ;=< N

A @' FA 6<' N A' =B=G1F1 B=' G 61F<& FA FC1 ?' BG' C<' =61?C <=' E ;@=' B <;<@'

A?A1 = ' C<' 0 I<; . < & A;D1 ;A;16 '1 . G;1= 1 ?' C =<' EC ' E<;<' AFFB=<Y#

9' 6<AI1 ?' B <;W@' =BFC& A @' A6EA =' A==B . 1 ?' C<' ?B16 ' 9' C<' AFFB=<@'1

A' 9;1?C 9116" = A <' 9' . 1=<; ' 1 ' C<' G ; =& C<' ;<=B6 ' 9' C<' F6 =1 ?'

9' C<' =<A=' N A @' ' C<' 6A @' 9; 1<;=& EC<;<' < =' 9' C B=A @=' 9' 9 ;<1? Y

DA < =' G;<I< <@' C<' GA==A?<' 9' A' =1 ?6<' DA6<' 9' . <;FCA @1M<' N 91 A66 '

A '1 @<=F;1DAD6<' A @' B 1I<;=A6' @;<A@' 9'1 IA=1 , A66" C<=<' <I16=& ;<=B6 1 ?

4' D @+@' M>C' ; >77$@C' >'C>D M<@7' B3' <M@' $+ ' B3' >G>7$>' @$+ ' @+<7@><@C' >J>+CB+' >LB#@B+(A' ?>DA@' JK' M$A' 3><M@70$+0#>S ' SMB' D>7>+<@@C' M$; '>' L7$+?$L>#$<K' <>#K ' M@' +BJ#K' 7@L#$@C' <M><' $<' S>A' LBAA$J#@' MB' ; $ M<' ABB+' M>G@' <B' A@@Q' >+' >AKME(&' ><') D+$?M ' >+C' <M><' M@' S>A' AD7@' <M@' $+ ' B3' >G>7$>' SBD#C' 7><M@7' 7@?@$G@' >' Y(((

$+0#>S' S$<MBD<' >' ?7BS+' <M>+' B+@' S$<MBD<' MB+BD7

9; .' C< A;D1 ;A; ' E166 9 < . A E<;< A F;B<6 6<== EC1FC E<A>< <@ C< ;< . < . D;A F< 9 CA ' EC1FC CA@ D<< ' AB?C ' D ' C< . 1=9 ; B <= 9 C< <I 6B 1 A @ EC1FC E1 C B ';< @<;1 ? ;A F< ;<GBD61FA ;< @<;<@ 1N# @<=1; B= 9 A 61D<;A66 ' F = 1 B <@ 0 I<; . < ' 66 C< GA; 1<= EC1FC CA@ D<< ' = '6 ?9 ;? < ' E ;<AGG<A;<@ A @ C< A61= = C< GA; 1=A = 9 C< B=< 9 (B;D ;<A 1 . A <@ D 'C G<<PF1 <@ D ' C< G;1<= = A @ . BFC . ;< B . <; B= A @ D 6@ A ' C1= G<;1 @ CA ' C< <I 6B 1 1= = D<?A ' '=G<A> A6 B@ A @ ' D< 61= < <@ `Y

C< 9B F 1 A;1<= 9 C1?C G =1 1 91 @1 ? C<1;' 9 ; B <= C;<A < <@ I< B;<@ ' @1=G6A 'A' F<; A1 '@<?;<< 91 @<G1< @< F< N EC16= ' C< F B; 1<;= A @ 6@ ?< <;A6= 1 F6B@1 ?' <I < @P . A @ AF@ A6@ G< 6 ' =G >< 9 G<AF< A= 1 @1=G< =AD6< A @ G;<==<@ C< . G<; ;' ' F F6B@< 1f ' '91 A6 GG ; B 1 'G;<=< <@ 1 =<69 ;' F F6B@1 ?' 1 'A@ IA A?< B=6 ' C< 1 1= <;= 9 ?6A @ B==1A A @ B= ;1A , # ;@ D<;@<< <==<6; @<' A @ < < . 1FC , A==< . D6<@ A ' ;A >9 ; G; G =<@ 1 'F F<; ? 5 < ' ,' AG 6< ' C< 8 C I< . D<; C<1 . . <@1A < F I FA ' : '5 # ' 1 ' A ' A C<1 . ' 9 A F ?;<==< 9 ;' C< GB;G =< 9 <? 0 3&>+Q3B7< 1A 1 ?' G<AF< ' C< DA=1= 9 C< ;<<= AD61=C . < ' 9 C< >1 ?@ .' 9 ;A F< E1 C1 ' 1 = A F1< ' 61 . 1 = , #C + ;< <<= C< 6G= A @ C< C1 < , A= C< ' CA@ D<< ' ?BA;A <<@ 1 ' " ' D ' C< ?6 ;1 B= G<AF< 961B <I 166<

C<=< F @1 1 = E<;< . ;< A@ IA A?< B= CA ' AG 6< A9 <;'= ' . A ' @1=A= <;= CA@ A ;1?C " ' <PG<F ' A ' C< CA @= 9 1; ;1 A <@ A @ I1F ;1 B= B; G< DB ' C1= G;1@< E B6@ ' F =< ' ' ?1I< EA ' A ' CW G; G<;' 1 . < ' < ?AI< A ' A . D1?B B= ;<G6 ' ' C< G; G =1 1 = 9 C< 9 ;<1? ' 1 1= <;=b @ A9 <;' C;<< E<<>=3 @<6A EC< D<1 ? D< <;' 1 9 ; . <@ # C ;<=G<F ' ' C< @1= ;<== A @ = A < 9 GBD61F 9<<61 ? 1 ' ;A F< C< =< '1 ' C1= A==< ' V C< G; G =A6 . A@< A ' ;A > ' [' YY5 9 ; 1 ' EA= '6A < ' C< F; ' 9 C< <1?CD B;1 ?' G GB6A 1 = EC1FC CA@ 9h<< ' = ' 6 ? GG;<==<@ ; =< A?A1 = ' C1 . A @ EA= 9 66 E<@ D ' I1 6< ' +6<A=B;<= ' 66A @ A; =< 1 '1 =B; ;<F 1 A @ FC =< C< C<A@ 9 C< B=< 9 ;A ?< 9 ;' 1 = - 1 ?N B;A ' =<GA;A <@ C1= 9 ; B <= 9; .' C =< 9 AG 6< 'N A @ I . '+ MM ' @1 (;? C< . G<; ;3= . = '9 ; . 1@AD6< A @ @< <; . 1 <@ G<;= A6 < < . &CA@ < 61?C < <@ 61< I<;<1? = A @ C<1;' 1 1= <;= E1 C ;<=G<F ' ' C< AF BA6 = A < 9 A99A1;= A @ GBD61F 9<<61 ? 1B

2 ' 0 ' ! " ! ' / >8 ' : !>' '8* - '

C< <PCAB= <@' < . G1;<' A @' CA@' G; . B6?A <@' A ' G1 1 ' CA ' B; G< F B6@' CA I< ' ;<G =< 166' AG 6< 'CA@' D<< ' ; '9; .' C1=' C; <' ' C< =A . < 1 . < ?6A @' G<;F<1I1 ?' C E' ;<A@16 ' 66A @' CA@' 9;<<@' C<;=<69' F F<1I<@' C< C G< 9' @<G;1I1 ?' AG 6< ' 9' E<;G' A @' (<6?1B . ' CB=' C< G0 G ; B 1 ' 9'=1? 1 ?' A ' C B;AD6<' G<AF<' A ' A C<1 . 'EA=' 6 = ' A=' 1 ' CA@' D<< ' =1P' . C=' D<9 ;<' A ' +;A?B<' D<9 ;< C< @1=A= <;' A ' <1G=1F' A @' D ' C< =A . < FAB=<= , C< . A@' D= 1 AF ' 9' A ' 1 @ . 1 AD6<" G;1@<' A @' A ' A . D1 1 B=' C G< 9' ;<?A1 1 ?' A ' F< A @' D 'A'=1 ?6<' D6 E' ECA ' CA@' D<< ' 6 = ' D ' = ' . A '9A @ =' A @' ;<I<;=<=

. . < =< ;<= B;F<=' E<;<' E' ;<J111;<@' 9 ;' C< @<9< F< 9' ;A F<' EC1FC' $A<7@AA' 9' GP61AB= <@' D C' A=' ;<? ;@<@' . < ' A @' . < ' C< @<; I' 7>+?@ ' 91F1< F ' 1 ' C< 91 A F<=' A . B <@' ' E ' CB @;<@' A @' 9 ; ' . 1 1 =' C<;<' EA=' ' F;<@1 ' ' D< D A1 <@' A @' C< ;<A=B; ' <=' EC1FC' CA@' D<< ' 1==B<@' 1 ' 6A;?<' B . D<;=' E<;<' A6;<A@ ' A ' A' @1=F B ' 9' E< ' G<;' F< ' N A @' 1 'EA=' <F<==A; ' ' @< . A @' . A 'CB @;<@' . 1661 =' 9' G; G<; ' EC1FC' EA=' A6;<A@ ' I<;DB;@< <@' A @' =1P' CB @;<@' C B=A @' = 6@1<;=' 9' A' G GB6A 1 ' EC1FC' CA@' D<< ' . E<@' @ E ' ' ' . A '91<6@=' @SC@ ; >+CA3B7' DA 6<' ' C< 7 C' I< . D<;' AG 6< ' @< . A @<@' C< ; @+' >+C' ; B+@K' < A <' A6 <' EC1FC' EA=' A=' =<; I16<' 'C1 . ' A=' <I<; A @' ?;A <@' 1 ' E1 C B ' @1=FB==1 ' C< . G<; ;' CA@' ' I< B;<@' ' =BD . 1 ' C1=' @< . A @=' ' C< <?1=6A 1I<' (@ ' 'D<FAB=<' 1 'EA=' EA 1 ?' 1 ' @ F161 ' DB ' D<FAB=<' AG 6< ' G<;F<1I<@' CA ' 1 ' C< <P1= 1 ?' = A <' 9' GBD61F' 9<<61 ?' C<' . < . D<;=' 9' A ' <6<F 1I<' A==< . D6 ' F B6@' ' < 1;<6 ' 1? ;<' 1 ' <' CA@' =B=G< @<@' C< <6<F 1 =' 9 ;' C< ;< 1;1 ?' =<;1<=&Y' A @' A@K B; <@' C< . << 1 ?' 9' C< A==< . D6 ' <' <?6<F <@' ' F F161A <' 1 K' A @' D<CA I<@' = ' A;D1 ;A;16 ' EA;@=' 1 ' A=' <I< ' ' 1 . G =<' BG '1 ' A' G;<=10 @< ' EC ' EA=' ' <' 9' 1 =' E ' . < . D<;=' 1 ' F ;A I< 1 ' 9' A6# G; G;1< 'A @' 6AE'KQ C1=' I1 6< 'A @' B 1 . <6 ' . <A=B;<' EA=' <PF<<@1 ?6 ' D P1 B=' ' C< 6<?1=6A ;=' EC ' CA@'KB= ' A; ;1I<@' 9; .' C<1;' @<GA; . < =' @<<G6 ' 1 . G;<==<@' E1 C' C< =G<F AF6<' 9' C< GBD61F' . 1=<; ' C< <PCAB= <@' = A <' 9' C<' F B ; ' A @' C<' 1 . 1I<;=A6' @1=F < 'N A @' EC< ' AG 6< 'G<;0 F<1I<@' C< <F<==1 ' 9' =<<>1 ?' C< =BGG ; ' 9' GBD61F' G1 1 ' C<' ;<AG<@' C< D1 <;' 9;B1 =' 9'= ' . A 'A;D1 ;A; 'A @' I1 6< 'AF =' A I1 ?' A==< . D6<@' C<

I' M@' @ $A#><$G@' BCK ' SM$?M' S>A' @#@?<@C' 3B7' 3$G@' K@>7A ' M>C' J@@+' CGC@C' $+<B' 3$G@ A@7$@A ' B3' SM$?M' B+@' S>A' 7@+@S@C' @>?M' K@>7

' >G$+ ' ; >C@' BD+<') B#C') $+$A<@7' B3' 'DA<$?@' $+' <M@' L#>?@' B3' @K+$@7 ' DQ@' B3') >AA> ' M@' >LLB$+<@C' <M@' #><<@7' <B' <M@' L7@A$C@+?K' B3' <M@' @ $A#><$G@' B7LA ' B3' SM$?M' M@' S>A' +B<' >' ; @ ; J@7

" ^) ' ' '0

< A <' A @' <?1=6A 1I<' ;G=' ' C<' ! C' %<F< . D<;&' C<' <PG6A1 <@' ' C< .' C<' <F<==1 1<=' A @' G<;16=' 9' C<' F B ; &' A @' @<=1;<@' C<1;' A==1= A F<' C<';<G6 ' 9' C<' < A <' EA=' . @<;A <' A @' =BD ' @+><F ' . 1==1I<' N DB ' C<' <?1=6A 1I<' ;G=' ;<= 6I<@' ' . A>' C<' . G<; ;' C<A;' C<' KB= ' F . G6A1 =' EC1FC' CA@' D<< ' '6 ?' ;<G;<==<@&' A @&' ' C<';<G ;' 9' ' A1 W&' A ' A@I FA <' 9' (;@<ABP&' A ' BG ' =# <?1# 1I ' ;1?C ' A @' <6 JB< ' . A &' 1 ' I <@&' 1 ' A =E<;' ' C<' =G<<FC' 9; .' C<' C; <&' A ' A@@;<==' 1 ' EC1FC' 1 ' @< . A @<@&' 1 ' ;<=G<F 9B6' DB ' 91; .' A @' @1= 1 F ' < . 1=&' C<' ADA @ . < ' 9' F JB<= =' A @' C<';<= ;A 1 ' 9' A' '6<?A6' 9 ; .' 9'? I<; . <

C1=' GG =1 1 &' EC1FC' EA=' . @<;A <' C B?C' B <PG<F <@&' EA=' @< 0 . 1 A <@' ;<A= ' D ' C<' . G<; ;&' A @' G; I ><@' C1=' I;A C' (' C1=' ;@<;=' A66' C<' F G1<=' 9' C<' A@@;<==' E<;<' =<1M<@N' C<' G; ; ?B<@' C<' <?1=6A 1I<' A==< . D6 &' A @' ' C<' 9 66 E1 ?' @A &' C<' A ? VXY~<' 'Y6= ' SA BA; N' ;<F<1I<@' A' @<GB A 1 ' S1; .' CA ' D @ ' E1 C' A' = ; .' 9' ;<G; AFC<=' ; .' C1=' 1 . <' GA; 1<=' C = 16<' ' C<' . G<; ;' 'I<;<' 9 ; . <@' C; B?C B ' C<' < . G1;<&' A @' B; G<' ; . @<;= @' 9; .' C1=' 1 . G;B@< ' B D;<A>' ' C<' GA; ' 9' AG 6< ' CA ' ;A F<' '6 ?<;' =BG0 G ; <@' C1 . ' A=' <' . A

C<' EC 6<' I1;16<' G GB6A 1 ' 9' C<' A <' EA=' =B . . <@' ' A; . =' N C1; ' CF;B=A @' A 1 A6' ?BA;@=' 9' +A;1=' E<;<' . D161=<@' A @' 1 F ;G 0 ;A <@' E1 C' C<' AF 1I<' A; . N' A @' C<' 6A= ' ;<= . ;F<=' 9' C<' A 1 ' E<;<' FA66<@' 1 &' ;<JB1=1 1 ' AG 6< ' @<F6A;<@' A;1A' B1=A') >7$>' BD$A>' <?< &' F 91@<@' C1=' E 9<' A @' FC16@&' EC . ' C<' EA=' @<= 1 <@' @ @+< ' =<<' ' . ;<&' ' C<' A 1 A6' ?BA;@&' A @' >' C<' 91<6@&' A9 <;' CAI1 ?' ?1I< ' C<' F . . A @' 9' C<' FAG1 A6' ' C1=' D; C<;' S =<GC

C<' ?C=C' A @' GA 1A;@=' A@IA F<@' ' C<' = B C&' A @' E<;<' A6;<A@ '

C<' + ;< <<=N' EC16=' C<' 9;I ' ?;<A # A; . 1<=' 9' C<' A<7@+ <M' 9<M@' F A61 1 ' 1 IA@<@' C<'<A= <; ' 9; 1<;=' <' 9' C<' 6A <;& FA66<@' C<' A; . ' 9' (C< . 1A&' F =1= 1 ?' 9' =1P ' C B=A @' . < ' B @<;' FCEA; M< D<;?&' . A;FC<@' BG ' ;A F<' D ' E1 M<;6A @' A @' 1 . . @A <@' C<' 61;A FC< . W' N EC16=' =1P ' C B=A @' B==1A =' A @' +;B==1A =& 9 ; . 1 ?' 1 @<;' (6BFC<;' C<' A; . ' 9' 16<=1A&' G< < ;A <@' 1 ' ;;A1 <' A @' 6=A 1A' A9 <;' CAI1 ?' F; ==<@' C<' C1 <' A ' 61;<<' G 1 =&' A C<1 . &' A < F<&' A @' D6< M' C<' ; C<; ' K9 1<;' EA=' A6= ' D; >< ' 1 &' A' CB @;<@' C B=A @' E1=' A @' O<; . A =' CAI1 ?' A6;<A@ ' 1 IA@<@' (<6?1B . ' B @<;' <; A@ <' C<' B 1 <@' = ;< ? C' 9' C<=<' C;<<' 1 IA@1 ?' A; . 1<=' ' C<

; C A @ C <A= EA C;<< CB @;<@ A @ #I< C B=A @ . < A @ E1 C1 A 9<E . C C< E<;< ;A1=<@ =1P CB @;<@ C 1P=AB@ D 61< A@@1 1 9 9;<=C 0<; . A A @ B==1A F ;G=

C< G6A 9 FA . GA1? 9 ; . <@ D FCEA; M< D<;? A @ (6BFC<; EA=

>;L>$ + 9 1 < C<1; A; . 1<= D< E<< CAB . A @ A ?;<=
7>+?@ , ,/ A@IA F< BG +A;1= 9; . C< A ?6<" 9 ; . <@ D

C< <1 < A @ C< A; < EA=1 C< =GAF< F . G;1=<@ D< E<< C<= E ;1I<;= CA AG 6< C G<@ = G A @ IA JB1=C C< . < F 91@<@ 0< <;A6 A1= C< @<9< F< 9 C< 9; 1<; 9 C< ; C A @ 61A 9 = B?<;<AB A @ EC16= B6 A @ BFC< = 166 9AF<@ C< < < . A C< + ;< <<= C< ;@<;<@ A;=CA6= < 1F ; A; . AF@ A6@ A @ ; 1<; 9A66 DAF> E1 C C< 9<<D6< ;< . A = 9 C<1; IA;1 B= F ;G= C< < I1; = 9 CT6 = EC<;< C< A;;1I<@ C1 . 0 =<69 C< 7 C SA BA; 1 C A66 C1= <99 ; = C< F B6@ 6 ?A C<; ?< C<; 919 C B=A @ . < F =1= 1 ? 9 C< I< <;A ;< . A1 = 9 C1= 6@ A; . 1<= A @ 1 <PG<;1< F<@ F =F;1G = E1 C EC1FC C . << 9 ;F<= C;<< 1 . <= A= . <; B= C< 9 ; B < << . <@ A6;<A@ C A I< ADA @ <@ C1 . C<=C E<@ C1 . =<69 =BG<;1 ;<I< C1 . =<69 1=D 6@ <== A @ AF 1I1 1 F;<A=<@ N A @ . << = A G<;16=< C< = 166 F F<1I<@ = . < 9 C =< D;1661A 1@<A= EC1FC E<;< C< 91;= FAB=< 9 C1= ?6 ; A= 9 C1= 9AB6 = A @ . 1=9 ; B <=

(6BFC<; EA= CA= < 1 ? E1 C C1= A13 . < . << CA 9 FCEA; M< D<;? A @ JB1 1 ? C< F B;=< 9 CW A; < 9 ; CA 9 C< BD< CA@ A@IA F<@ CA ;1I<; A= 9A; A= (;1< < AG 6< G<;F<1I<@ 61A 1 EA= <F<=0 =A; A G;1F< YG;<I< C< KB F 1 9 C< E AP . 1<= D FFBG 1 ? C1 . =<69 C< 61 < 9 C< BD< A @ @;1I1 ? DAF> (6BFC<; BG C< A; < 1 C C1; E C B=A @ . < F . . A @<@ D A J < 1F ; A @ <9<DI;< %<= B< <= C< . A;FC<@ ;AG1@6 9; . CA6 = A1 %1M1<; N 9; . C< F< C< GB;=B<@ (6BFC<; A @ < F B <;<@ C1 . B @<; C#

><<#@ B3 7$@$; @ EA66= 9 (;1< <Y EC<;< C< ?AI< C1 . DA 6< A @ ?A1 <@ ?6 ;1 B= I1F ; (6BFC<; EA= @1=6 @?<@ 9; . (;1< < E1 C ?;<A 6 = A @ @;1I< DAF> BG C< C1<;< 9; . EC< F< C< ;< ;<A <@ A= 9A; A= ;A < 9 ; . <@ 9 (6BFC<;3= @<9<A A @ G<;r B1 G =1 1 FCEA; M< D<;? B; <@ C1= F 6B . = EC1FC E<;< . A;FC1 ?

4 #D?M@7 M>C >#7@>CK LB@A@C 7$@++@ >+C S>A ; >7?M$+ DLB+ 7?$A SM@+ DLB+ J@$+ $+3B7 ; @C B3 >LB#@B+(A ; >7?M M@ 7@<7>?@C M$A A<@LA 3B7 <M@ LD7LBA@ B3 A<BLL$+ M$; > 7$@++@

" ^ ;G ' % ' 8!8

EA;@=' ; <=(' C<' ;1?C (' 9 ;' C<' GB;G =<' 9' <99<F 1 ?' A'KB F 1 ' E1@1' (6BFC<;' Q GG =1 <' C<' G6A <AB' 9' C<' C1]; <(' EC<;<' C<' . G<; ;' CA@' CA6 <@' ' C1=' =G ' C<;<' >' G6AF<' ' C<' =' <D;BA; (' (' A' @<=G<;A <' FV S@1F' D< E<< ' <' CB @;<@' A @' =<I< ' C B=A @' B= ;1A =(' +;B==1A =(' B==1A =(' A @' (AIA;1A =(' A @' 611; E ' C B=A @' ;< FC' 6 (' F . . A @<@' 1 ' FC1<9' D ' AG 6< (' A @' ; . @<;' C1 . ' D ' B@1 (' A; . (' 1F ;(' A @' OW;A;@' C<' DA 6<' 6A= <@ <1?C ' C B;=' A @' < @<@' E1 C B ' A ' @<F1@<@' ;<=B6 'N C<' < < . ' D<1 ?' B AD6<' ' FA;; ' C<' G =10 1 =' 9' C<' ;< FC(' DB ' ;< A1 1 ?' C<1;' E ' ' EA=' <F<==A; ' ' 9A66' DAF>' D<9 ;<' =BFC' 9 ; . 1@AD6<' . A==<=(' A @ ' @B;1 ?' C<' 1?C ' AG 6< ' <99<F <@' 1 ' ? @' ;@<;' A' ;< ;<A ' BG ' ; <=

<' ;<F<1I<@' 9; .' IA;1 B=' @1;<F 1 =(' A @' <=G<F1A66 ' 9; .' +A;1=' A @' C<' A; . 1<=' 1 ' GA1 (' 1 . G ; A ' ;<1 9 ;F< . < =(' EC1FC' ;A1=<@' C<' B . D<;' 9' ; G=' A ' C1=' @1=G =A6' ' <1?C ' C B=A @' . < 'N DB ' C<' < < . ' E' CA@' C;<<' CB @;<@' A @' E< ' C B=A @(' A @' 9; .' A66' =1@<=' FA . <' <E=' 9' 9;<=C' @1=A= <;=' B;A ' @<F6A;<@' G< 6 ' A?A1 =' AG 6< (' A @' EA=' . A;FC1 ?' ' F;B=C' +;1 F<' B?< <'N C<' GA 1=C' G # <?F F ' 9' A@1M' ;<9B=<@' ' ;<F ? 1=<' C<' ;<A ' 9' A6< ZA (' A=' <;@1 A @' E B6@' ;< . A1 ' 1 ' FAG 1I1 (' A @' C<' ?6 ' GA 1=C' A; . =' ;< A1 <@' A'6A;?<' G ; 1 ' 9' C<' ;< FC' ; G=' ' C<' @ B;' A @' + ;< <<=' FCEA; M< D<;?' A @' (6BFC<;' F 1 B<@' C<1;' . A;FC(Q A @' C = 16<' 9 ;F<=' A6;<A@ ' . A@<' C<1;' AGG<A;A F<' A ' A' 9<E' 6<A?B<=3 @1= A F<' 6 '9; .' C<' FAG1 A6' +A;1=' EA=' 1 ' F = <; A 1 (' A @' A;1A' B1=A(' A99;1?C <@' 1 ' C<' . 1@=' 9'C<;' <;;191<@' F B F166 ;=(' CA@' G;A <;=' F 1 BA66 ' 99<;<@' BG' 1 ' A66' C<' FCB;FC<=' @B;1 ?' 9 ; ' C B;=' AG 6< ' =AE' A; B @' C1 . ' C1=' ?< <;A6=' D<A < ' F 1 BA66 (' A @' 61<' G GB6A 1 =' 9' C<' G; I1 F<=' |' G;< ' ' C<' . =' <P ;< . <' =B99<;1 ?=' N C<' 9 ;<=AE' A ' 6< ? C' C<' 9A <' _'IC1FC' AEA1 <@' C1 . ' =C B6@' C<' A661<=' ?A1 ' A' @<F1=1I<' I1F ; (' A @' C<' A6;<A@ ' =B99<;<@' C<' F;B<6' = ; ><=' 9' 1;<' AI< ?1 ?' ? A@' A ' C<' ;<96<F 1 ' 9' C<' <I16=' EC1FC' C<' CA@' D; B?C ' BG ' C1 . =<69' A @' BG ' C1=' F B ; (' f1 C1 ?(' C E<I<;(' F B6@' F;B=C' C1 . ' <' GG =<@Y A ' 1 @ 1 AD6<' < <;? ' ' C<' ;1? B;=' 9' 9 ; B <(' A @' C<' A ?B1=C' =B;<=' A<' D <M@' ; L@7B7 9' C1=' C<A; ' F B6@' ' D=FB;<' C1=' C B?C =(' EC1FC' E<;<' A=' ;<A@ ' A @' 6BF1@' A=' 1 ' C1=' CAGG1<=' @A =' <' . A@<' C1=' G;<GA;A 1 =' _'I1C' . A; I<66 B=' AF 1I1 'N @1;<F <@' C1=' D; C<;' S =<GC' '9 ; 19 ' +A;1=(' ' @<9< @' 1 ' ' C<' 6A=' < P ;< . 1 (' A @' ' G6AF<' 1 ' =A9< (' 19' <F<==A; (' C1=' #I19<(' C1=' = (' A @' C1=' ;<A=B;<(' D<C1 @' C<' 1;<N ;@<;<@' BFC< '

5E1 C@;AE 96A< ;< FC ; G= 9; . (A;F<6 A A @ 9; . A66 C< G6AF<= EC1FC C< = 166 FFBG1<@ 1 A A6 1A A @ =< @ C< . C1 . I1 C B @<6A ;<FA66<@ B?< < ;@<;1 ? C1 . <IAFB < A6 A @ 1 . 1 < C1= 9 ;F<= E1 C C =< EC1FC B?<;<AB CA@ A==< . D6<@ A =N CA@ C< + G< F @BF <@ DAF> A6 &Y A @ =< A 61D<; <;@1 A @ A9 <; CAI1 ? D A1 <@ C1= G; . 1=< CA C< E B6@ <P<FB < C< ;<A 9 A6< ZA N =< AB6A1 F B; % B>< 9 1F< MA ;<G;<=< ;A F< A @ <? 1A < G<AF< A C] ?;<== 9 CA 166 N A @ A C< =A . < 1 . < 9 ; . <@ A A@ . 1;AD6< G6A 9 FA . GA1? 9 ; C< GB;G =< 9 F;B=C1 ? C< E ?;<A C = 16< A; . 1<=N < D<61<I<@ CA C< E B6@ =<GA;A < A @ CA C< E B6@ D< AD6< D<A C< . 1 A @ @;1I< C< . DAF> BG C< C1 <

C<=< A; . 1<= @1@ 1 9AF =<GA;A < , (6BFC<; A>1 ? C1= E C< ;1?C A @ . A;ZC1 ? BG +A;1= D C< A66< 9 C< A; < N EC16= FC1IAP M< D<;? 9 66 E<@ C< F B;=< 9 C< <1 < AG 6< 9 66 E<@ C< . E1 C C1= <A?6< ?6A F<N A @ =<1M<@ C< @<F1=1I< . . < 9 ; I1F ; <AI1 ? A G ; 1 9 C1= 9 ;F<= 1 C< DA=1 9 C< <1 < 1 C< < I1; = 9 ?< A @ <;<AB B @<; 1F ; B@1 A @ 0W;A;@ EA FC A @ C 6@ 1 FC<F> FC1IA; M< D<;? C< C;<E C1 . =<69 E1 C C1; C B=A @ . < F . 0 . A @<@ B @<; C1 . =<69 D < A; . ; 1<; A @ <9<DI;< BG C< A; . B @<; (6BFC<; C< 6A <; EC16= @;1I1 ? DAF> AF@ A6@ A= 9A; A= <ABP . A;FC<@ A A <JBA6 @1= A F< 9; . C< BD< A @ C< A; < A @ 9 66 E<@ C< ; A@ EC1FC K 1 = CT6 = A @ <; W = B= S BA; ;< GA==1 ? D CA . G BD<; A @ . 1;A16 B; @A = =B991F<@ AG 6< I<; A>< A @ IA JB1=C C< 9 B; F ;G= 9 C1= A; . < A9 <; g AG 6< F; = <= C< C<; C< " C 9 <D;BA; C< < ?A? <@ A @ @< C< 9 1; 2A $ 9 =# ; <@ C< B==1A F ;G= 9 6= BI1<99 A C< ?6 ;1 B= =B<<6#1 . DA 6< 9 CA . G BD<; N C< 9 66 E1 ? @A C< 9 B?C (1=FC<;&Y <D 0< <;A6 AF>< A . 1;A16 EC<;< C< ?A1 <@ A D;1661A ; A , ,/ I1F ; =6A 1 ? A @ A>1 ? <1?C C B=A @ 9 C< < < . 'z A @ C< E1 C B GAB=1 ? C< . A;FC<@ BG CT <AB C1<;; C< AG0 G; AFC<= EC1FC E<;< @<9< @<@ D 0< <;A6 ;F>A @ +;1 F< 1661A . 9

I >LB#@B+ A@+< J>?Q <M@ BL@ <B <>#K<M>< MB ; $ M< M@ >LBS@73D# BJA<>?#@ <M@7@ <B <M@ L7@<@+A$B+A B3) D7><

B+ 7@AA M>C J@@+ >AA@ ; J#@C >< M><$##B+ B+ <M@ C@ ; >+C B3 + #>+C >+C DA<$$> 3B7 <M@ LD7LBA@ B3 ?B+A$C@7$+ <M@ ?B+C$<$B+A B3 L@>?@ < S>A <M@ #>A< <$; B <M>< <M@ >##$@C LBS@7A SBD#C ?B+A@+< <B <7@>< S$<M >LB#@B+ M@$7 C@ ; >+CA SB$G +B< Q+BS+ JD< A$+$A<@7 7D ; BD7A B+ <M@ ADJR@?< S@7@ >J7B>C

+;B==1A' _E1 C' E< ' C B=A @' .< ' AG 6< ' @<9<A <@' C<.(' =6<E' A' ?;<A' B.69<;' 9' C<.(' .A@<' 91I<' C B=A @' G;1= <;=(' A @' < <;<@' C<' E (' I1F ;1 B=(' 1 'GB;=B1' 9' C<' < <. (' EC =<' ;< ;<A' EA=' F I<;<@' D' C<' A; <' C;<<' 9' (6BFC<;3=' ?< <;A6=' CA@' CB=' D<< 'GB' '961?C (' E C' A' 1. .< =<' 6 ==' 1' .< (' C ;=<=(' A @' A; 966<; ' ' ;<. A1 <@' 'X;A JB1=C' (6BFC<;' C1. =<69(' EC 'EA=' E' A@IA F1 ?' E1 C' C<' ;<=' 9' C1=' A; .'D' C<' .1;A16' ; A@' AG 6< (' 1 @<9A 1?AD6<(' ;< ;AF<@' C1=' = <G=(' < 0 F B <;<@' '(6BFC<;' A' ABFCA.G=(' A @' C<;<(' ' C<' C' 9' <D;BA; (' 9 B?C' E1 C' C1.'A' @<=G<;A <' DA 6<(' IA JB1=C<@' C1.(' >' ;' =6<E' E<6I<' C B=A @' 9' C1=' ; G=(' A @' @; I<' C1.'A' C '=E ;@3=' G 1 'D< @' ?<=(' -'6<A?B<=' 9; .' CA6 =

C<' A; .' 9' 16<=1A' EA=' CB=' F .G6< <6' @1= ;?A 1M<@' A @' CA69' @<0 = ; <@(' CA1;1 ?' 6 =' C1; ' C B=A @' .<' A @' A' ?;<A' G ; 1 ' 9' 1 =' A; 166<; ' AG 6< ' CB=' I1F ;1 B=(' ;<= 6I<@' 'A@IA F<' E1 C B '@<6A' '9; .' C<' A; <' C<' <1 <(' C<' GA==A?<' 9' EC1F61' CA@' D<< ' 9 ;F<@' A' (;A' D' C<' O;A @' ; .' 9' (C<.1A(' B @<;' FCEA; M< D<;?(' EC' A6;<A@' FFBG1<@'1 =' E 'DA >=' 9; .' ?< ' ' A1 <D6<AB' '.A;FC<@' @1I1@<@'1 '=<I<;A6' F ;G=(' 9' EC1FC' E 'C<6@' 61<' ;1?C 'DA >' 9' C<' ;1I<;(' C<' <(' 1. @<;' 1 ?< = <1 (' A' +; I1 =(' C<' CJ;(' B @<;' %<' ;<@<(' A' A ?1=' C<' C<;' F ;G=' 9' FCEA; M< D<;?3=' A; .' FFBG1<@' <;<AB(' (;A (' A @' ?< ' AG 6< (' E1 C' C1=' I1F ;1 B=' A; .(' E' 1 F;<A=<@' D' 6AF@ A6@3=' F ;G=' A @' B.<; B=';<1 9 ;F .< =(' A;;1I<@' ' C<' 7 C' 9' <D;BA; 'A' OB1? <=' ' C<' 2 C' 1 'A==B.<@' C<' 99< =1I<(' A AF><@' C<' < <. (' A @' GB 'C1.' '961?C (' E1 C' F =1@<;AD6<' 6 ==' A' C<' DA 6<=' 9' ;. (' A ?1=(' A @' 166< <BI<(' ' C<

BG@7?B ; @A'<M@

.A;FC<@' ;AG1@6 ' BG ' <;<AB(' EC<;<' C<' C1 ' EC1FC'

. .A @=' C<' <1 <' EA=' FFBG1<@' D 'A' B.<; B=' F ;G=' 1=B 91 @<;' C<' +;1 F<' 9' B; <.D<;?' C<;<' C< ' >' G6AF<(' 91 ' C<' C(' A' 9B;1 B=' F 961F'N C<' C166' EA=' =<I<;A6' 1.<=' A><' 'A @' ;<0 A><' (' .@<;' A' <;;1D6<' 91;<N A' 6< ? C' O< <;A6=' OW;A;@' A @' +AK 6' =BF' 91<<@<@' 1 ' FA;; 1 ?' 1 'N C<' B; <.D<;?1A =' E<;<' G;<F1G1 A <@' 9; .' C<' G6A <AB' 1 ' C<' ;1I<;(' EC1FC' C< ' ;<GA==<@' A9 <;' CAI1 ?' 6 =' =<I<' ' C B0 =A @' .<' 1 ' >166<@(' E B @<@(' ;' G;1= <;=' AG 6< ' C< ' C;<E' C1=' AIA6;' D< @' C<' D;1@?<' 9' <;<AB(' 1 '=<A;FC' 9' C<' B= ;1A 'F ;G=' 91 @<;' 66 ;<@ (' EC1FC' 1 ' EA=' ' C<' G 1 ' 9' FAG B;1 ?(' DB ' EC1FC' EA=' +; <F <@' 1 ' 1 =' ;< ;<A' D' 61<' <' C<' O;A @' ; .' 9' (C<.1A' ' A=' CB=' 1 ' 1 =' B; ' F .G6< <6 ' D<A < ' FCEA; M< D<;?' ;@<;<@' A' ;< 1 <A 3

;<= 6I<@' EC< ' C1=' =C B6@' CAI<' D<< ' AFF . G61=C<@' '9A66' BG '@1<' F . 0 . '< < . '1 ' F F<; ' E1 C' C<=<' A; . 1<=(' A @' = 196<' C1 . ' 1 ' <' 91 A6' A @' 1 I1 F1D6<' ?;A=G

BFC' EA=' C<' G =1 1 ' 9' C<' D<661?<;< 'GA; 1<=(' EC< (' ' C<' G; G =10 1 ' 9' ;@' A= 6<;<A?C(' C<' A661<@' G E<;=' =1? <@' A ' CAr . 'A' <E' ;<A ' 9' A661A F<&(' D ' EC1FC' <AFC' 9' C< . ' < ' AB. B#B9< A $@C' LBS@7A ?A?<@' '9B; 1=C' A' F 1 ?< ' 9' A' CB @;<@' A @' 919 ' C B0 =A @' . < 'B 16' C<' F F6B=1 ' 9' C<' EA;(' 1 @<G< @< 6 ' 9' C<' ; G=' ' D<' 9B; 1=C<@' D ' C<' . 1 ;' G E<;=(' EC1FC' E B6@' ;A1=<' C<' ?< <;A6' 9 ;F<' 9' C<'F A61 1 ' ' <1?C ' CB @;<@' C B=A @' . < ' ?6A @' < ?A?<@' ' 9B; 1=C' C<;' F 1 ?< '1 ' C<' =CAG<' 9' ; G=' 1 'C<;' GA (' A @(' . ;< I<;(' 99<;<@' A ' A BA6' =BD=1@ ' 9' =1P' . 1661 =' = <;61 ?(' 'D<' @1I1@<@' D< E<< ' B==1A(' +;B==1A(' A @' B= ;1A ' C<' @<=1;<@(' 1 ' 9AF (' D ' C<' ?;<A <==' 9' C<;' =AF;191F<=' A @' C<;' <99 ; =(' ' =<FB;<' 'C<;=<69' C<' G;<G @<;A F<' 1 ' (' C<' A;;A ?< . < ' 9' C<' <; . =' 9' G<AF<(' A @' ' < =B;<' C<' 9B6916 . < ' 9' C<;' 9AI B;1 <' 1@<A' 9' C<' <= AD61=C . < ' 9' A ' 1 . G ; A ' >1 ?@ .' (' ' C<' ; C<; ' 9; 1<;' 9' ;A F<' D ' C<' B 1 ' 9' 66A @' A @' (<6?1B .

C<' G E<;=' . B BA66 ' A?;<<@(' . ;< I<;(" CA ' C< ' E B6@' =<I<;A66 ' ><<G' BG(' @B;1 ?' E< ' <A;=' A9 <;' C<' =1? A B;<' 9' G<AF<(' A ' A; . ' 9' =1P ' C B=A @' . < (' 'D<' A ' C<' @1=G =A6' 9' CA ' 9' C< . ' EC .' ;A F<' =C B6@' A AF>' C1=' ;<A (' = ' 9A A6' ' ;A F<(' =<; I<@' A=' C<' DA=1=' 9' C<' 9A . B=' ;<A ' =BD=<JB< 6 ' > E ' D ' C<' A . <' 9' C<' 6 ' 661A F<' 1 C' ;<9<;< F<' ' C<' G; G =A6=' . A@<' A ' C<' ?;<==' 9' CA 166 (' A' <; .' _IIA=' 91P<@' A9 <;' EC1FC(' 1 ' EA=' @<F6A;<@(' C<' <? 1A 1 =' E1 C' AG 6< ' # B6@' D 'D; ><' 99' A @' <I<;' ;< <E<@' C<' 6A <;(' EC16=' ';<K<F 1 ?' C<' G; G =A6=' 9' C<' ?;<==' E1 C' A ?<;(' <I<; C<6<==' < @<AI B;<@' '@<F<1I<' C<' < < . 'A=' ' C1=' ;<A6' 1 < 1 =(' A @' ' ?A1 ' 1 . <' D ' ;@<;1 ?' AB' F 1N' 'F 1 B<' C<' <? 1A 1 =(' EC16=' C<' C1 . =<69' G; F<<@<@' F<' o1 ;<' ' ; ' C<' 9 ; B <' 9' EA;

(6BFC<;(' CA69' @<= ; <@(' DB ' ;1IA661 ?(' C<' . G<; ;' 1 ' < <;? ' A @' AF 1I1 (' CA@' A6;<A@ 'A6 . = ' ;<GA1;<@' C1=' @1=A= <;=' <' CA@' AGG; AFC<@' FCEA; M< D<;?' A @' FFBG1<@' C<' ;1?C 'DA >(' 9' C<' <1 <' A ' W; (' EC< ' C<' 6<A; <@' CA ' E ' B . <; B=' F ;G=(' B . D<;1 ?' ?< C<;' 9<SB 919 ' C B=A @' . < (' X . @<;' (B6 E' A @' 1 M1 ?<; @(' CA@' + :A @' ><< '@< AFC<@' 9; .' (<; A@ <3=' A;A1 ' ';<1 9 ;F<' C1=' E (' 11 .?<; @

A @ CA C<=< ; G= E B6@ A 1I< D EA 9 1== = A @ <1 . = (6 FC<; C< . C< . ;< G; . G 6 (6BFC<; A?A1 6<9 C< A; . 1 = (C < . 1 A & A @ . A;FC<@ ;AG1@6 9; . C< <1 < C< A; <& EC1FC C< F; ==<@& EC< C< EA= = GG<@ D A;=CA6= A . 1 A @ ; 1<;& EC E<;< = ; ?6 < ;< FC<@ D<C1 @ C< B;F# FA A6 AG 6< G<;F<1I<@ E1 C @<61?C CA (6BFC<; CA@ A?A1 1= 6A <@ C1 . =<69& 9 ; C< C G<@ @<= ; C1 . D<9 ;< C< F B6@ <99<F A KB F 1 E1 C C< F ;G= 9 1 M1 ?<; @ A @ (B6 E& A @ 6<AI1 ?' D<9 ;< ; <=& 9 ; C< GB;G =< 9 . A=>1 ?' C1= . I< . < =& CA69 C1= A; . & B @<; C< >LB#@B+' LD<0 F . . A @ 9 AF@ A6@& B@1 (A @ OW;A;@& C< CA= < <@ _E1 C C1; 91I< C B=A @ . < & F . . A @<@ D < & 1F ;& #>?M@7 %; B & 1B GB =B1 9 A =B;< G;< < F; ==<@ C< A; < 1 C1= B; & A @ (6BFC<; 9 B @ C1 . =<69 < F6 =<@ 1 A G<;16 B= G =1 1 & D< E<< C< 1= < A @ C< A; <& CAI1 ?& < =1@< C< F ;G= 9 ; 1<; A @ A; . & A @ C< C<; AG 6< E1 C C< DB6> 9 C1= A; .

C< D;1@?< 9 1== = ' I<; C< 1= < EA= C< 6 B 6< D '19C1FC (6BFC<; F B6@ <=FAG<& A @ CA F1 & EC1FC EA= FA;<9B66 G; I1=1 <@& EA= A6= C< 6 G 1 A EC1FC A KB F 1 F B6@ D< <99<F <@ D< E<< (6BFC<; 3= A; . A @ CA 9 1 M1 ?<; @ A @ (B6 E& EC . A;FC<@ A @ 1 I<= <@ 1 AG 6< D<61<I<@ C1 . =<69 F<; A1 9 I1F ; & EC< =B@@< 6 A FA6A . 1 A= B <PG<F <@ A= 9A A6 I<; C;<E A C1= C G<= >L$<D$><$B+' B3' 1== B= FAG1 B6A <@& A @ G< <@ 1 = ?A <= C< < < . K#F 9111< (6 FC<; <=FAG<@& <99<F <@ A KB F 1 E1 C 1 M1 ?<; @ A @ MB><D@ >7 ; $@A A @ 9 B @ C1 . =<69 A C< C<A@ 9 A CB @;<@ C B0 =A @ . < 1 =A9< D<C1 @ C< 1= <& EC1FC CA@ D<< A D= AF6< 1 C1= GA C& A @ EA=3 E C1= G; <F 1 AG 6< & 1 =G1 < 9 C1= F;B<6 ;<I<;=<& @1@ < ;< B F< A66 C G<= 9 _I1F ; < 9 66 E<@ (6BF61<9 C< ;1?C DA >& < <;<@ 1== =& A @ A AF><@ C< < < . & EC EA7 = ; ?6 < ;< FC<@ C< G6A <AB 9 ;A <& EC1FC <P < @= <I<; A ><#@' B3' =GAF< 9 <I<;A6 6<A?B<= D< E<< 1== A @ A & 7>B++@ EC1FC (6BFC<; @<9< @<@ E1 C A66 C1= A; . C< ;< FC A; . EA= DB CA69 A= B . <; B= A= CA 9 C< < < . & DB AG 6< <I<; C<6<== ;@<;<@ C< A IF>& A @ A9 <; C< . = C<; 1F <99 ; = A @ A 9;1?C 9B6 FA; A?<& C< ?A1 <@ G ==<==1 9 C< C<1?C = 9 ;A <& F . G<66<@ (B6FC<; ; ;< ;<A & A @ C 6 GB;=B<@ C1 . (B A

. 1 < 9 ; . 1@AD6< D= AF6< E' G;<=< <@' 1 =<69' (6BFD<;(' A9 <;' CA I1 ?' ;A661<@' D1=' IA;1 B=' F ;G=(' FFBG1<@' C< F ; . ; ' ; B @' A (' A @' CA ' F1 '1 =<69(' EC1FC' 1=' =1 BA <@' ' A' ; F>' 9; .' EC< F< C< < < F . . A @=' A' IA=' G6A1 ' C1=' EA=' A' 9 ; . 1@AD6< G =1 1 (' A @' < EC1FC' 1 ' EA=' <F<==A; ' CA ' C< ;< FC' =C B6@' FA;; ' 9 ;' C< GB;G =< 9' (A 6< 9' ' F6 =1 ?' A?A1 =' C< < < . ' C< ; A@' ' +A;1=' N A @' C< ' C<;< 1 ' >' G6AF< @B;1 ?' E ' @A =' A' 9;<=C' DA 6< . ;< D6 @ ' <I< ' CA ' C< G;<F<@1 ?' (B '1 ' EA=' 1 ' IA1 ' CA ' < (' %; B (' CA;G< 1<1)(' ; 1<;(' A @' ;1A @' ;1 IA66<@' <AFC' C<;' 1 'F B;A?< N 1 ' IA1 ' CA ' C< C<; 1F' ?BA;@(' 9 ; . <@' 9 ;' C< . =' GA; ' 9' B ?' ;<F;B1 =(' =<1M<@' C< 9ABD B;?=(' A @' . A@< 91I< @<=G<;A < A==AB6 =' ' C< G6AF< B @<;' C< . =' <; ;191F' 91;<' ' 9 ; B A < . A BI;< 9' A; . 3=' @<G;1I<@' C< ;< FC' 9' A66' FCA F< 9' =BFF<==' N 1 ' EA=' <F<==A; ' ' 1<6@' ' B . D<;=' N A @' (6BFC<;' ;< A1 <@' C1=' G =1 1 ' AG 6< ' E' ;@<;<@' A' ;< ;<A (' A @' C< . A ' EC ' A=G1;<@' ' (';< <E' C< 6@' A;6 I1 ?1A ' < . G1;< CB=' =AE' C1=' 9 ; 1 . <=' G<;1=C' D< <A C' C< EA66=' 9' C< A F1< ' F1 ' X C<;< CA@' <PG1;<@' CA ' 9' C< 6A= ' @<=F< @A ' 9' CA;6< . A? <' C1=' 9 ;F<@' ;< ;<A (' A9 <;' E ' . B;@<; B=' DA 6<=(' @<0 F1@<@' C< 9A < 9' C< FA . GA1? (' 1 ' EC1FC' AG 6< (' E1 C' 6 ' =<I< ' C B=A @' . < (' CA@' = ' 6 ?' . A@< C<A@' A?A1 =' A @' IA JB1=C<@' C;<< CB @;<@' C B=A @' <' CA@' 'D<< ' AD6< ' @<= ; ' (6BFC<;' A ' ;A < A @' A H' A @' E' FCEA; M< D<;?' EA=' AGG; AFC1 ?' C< . G<; ;' AE' CA ' C< EA=' G E<;6<==' <1 C<;' ' G;<I< ' C< KB F 1 ' 9' C<' < < . 3=' 1 . . < =< A; . 1<=(' ;' ' G;<I< ' C<1;' F . D1 <@' . A;FC' BG ' +A;1=(' @' CA ' C< EA=' 1 ' @A ?<;' 9' D<1 ?' = 196<@' 1 ' C< ?1?A 1F' A; . =' 9' C< F A61 1 ' 1=' ?< 1B=' C< ' F F<1I<@' A' 9;<=C' F . D1 A 1 (' @' 9 ;' C< GB;G =< 9' FA;; 1 ?' 1 ' B (' C< ;@<;<@' C1=' ?< <;A6=' ' . A>< 9 ;' C< E ' 9' ;F1=(' ' C< 6<9 ' DA >' 9' C< BD<(' EC<;< C< A;;1I<@' C< 91;= (' A @' EC<;< C< =B@@< 6 ' < F B <;<@' C< EC 6< A; . ' 9' (C< . 1A' '1 =' . A;FC(' ' K 1 ' CA ' 9' 16<=1A ' < CA@' 6 ' A' G ; 1 ' 9' C1=' 9 ;F<=' A ' CA @(' DB ' @1@' ' C<=1 A < E1 C' E< ' C B HA @' . < ' ' < ?A?< C< < < . '=' . < ' C B=A @' ' C1=' >0 <P ;< . < G<;16' C< @1=G6A <@' 1 @ . 1 AD6< ;<= 6B 1 'N C<6@' 1 ' FC<F>' C< < < . 3=' 1 . . < =< A; . ' D ' C< . A; I<66 B=' <PG6 1 =' 9' C1=' ?BA;@' @ C1=' ?< <;A6=(' =6<E' 1 < C B=A @' 9' C< . (' 6 =1 ?' C;<< C B=A @' C1 . 0 =<69(' A @' <= AD61=C<@' C< 9AF ' 9' C1=' I1F ; ' D ' ;< A1 1 ?' C1=' G =1 1 ' 166' C< 1?C ' (B ' C<=< E<;< B=<6<==' 6AB;<6=(' A @' A66' C<=< G; @1?1<=' 9

.# #B.#.7 ' = !+ ' $ ' "8

+A;1= E ;<F<1I<@ E1 C1 '1 = EA66= C< 661<@ I<;<1? =(A ' C< C<A@ 9 C<1;' A13 11<A Y 6<PA @<;(D<CAI<@ A= A ?< <; B= I1F ;' N =A 1=91<@ E1 C C1= ;1P1 . GC C< < @<AI B;<@ ' G6<A=< C< G `1 1 Y 9# ' ;< FC A @ AFJB1;< C<1;' <= << . ' +<AF< EA= C1= DK<F (C< A1@(A @ C< CA@ F . < ' D A1 '1 '1 ' +A;1= D ' I<; C; E1 ?' C< . A ' ;I1 61 EC .' A ' @B;AD6< G<AF< EA= 1 . G ==1D6<' < @<=1;<@ CA ' 1 A F< =C B6@ 'D< G E<;6B6 A @ 9;<< E1 611 ' C<;' A F1< ' 61 . 1 =(A @ CA ' =C< =C B6@ C<;=<69 FC =< C<;' <E 9 ; .' 9 ? I<; . < ' ' G; . 1=<@ ' ;A 19 ' C<;' FC 1F<(A @ CA ' 1 ' =C B6@ D< ;A 191<@ D ' C1= A661<=(EC ' E<;< . BFC 6<== E<66 @1=0 G =<@ IA;@= ;A F<(DB ' EC ' E<;< 'G E<;9B6 < B?C ' GG =< C1 . ' = A' G6<@?< 9 C1= 9AI B;AD6< @1=G =1 1 ' EA;@= ;A F<(6<PA @<;(EC< ' C< ;<F<1I<@(A ' C< CT <AB 9 (@ (C< B 1F1GA6 B F16 9 +A;1=(AFF<@<@ ' C< E1=C 1 ' <PG;<==<@ CA ' 1 ' . 1?C ' F 1 B< ' =BG<;1 < @ C< F1 'G 61F<(A @ CA ' C< 1 CAD1 A = . 1?C ' D< ;<6<A=<@ 91; .' C< DB;@< ' 9 6 @?1 ?' C< A661<@ ; G=' C< @A ' 9 66 E1 ?' C< FAG1 B6A 1 ' 9 +A;1=(C< 8 = ' A;FC(C< < <;<@ C< FAG1 A6(?< C<;' E1 C C< - 1 ?' 9 +;B==1A(A ' C< C<A@ 9 C< A661Z@ A; . 1<=' < AGG<A;<@ '61= < ' E1 C 9AI B;' ' = . < 1= ' @< . = ;A 1 = '9AI B;' 9 C< B=< 9 (B;D (A @ A61?C <@ A ' C< C <6 9 +;1 F< mA66< ;A @(C< . =' AF 1I< A= E< ' A= C< . =' G E<;9B6 9 A ' EC ' < @<AI B;<@ ' ;<= ;< C< F; E ' ' CA ' A F1< ' @ A= ' =1 ?6< F = 1 B <@ D @ && C< < A <(A6 < =<< . <@ A ' C1= 1 . <(1 ' =G1 < 9 C< @1=F;<@1 ' 1 ' EC1FC 1 ' CA@ 9A66< (' <)KG;<== A' E166 1 ' C< A . < 9 C< A 1 'N DB ' C< < A <(CAD1 BA <@ ' ;< . D6< 1 ' C< G;<=< F< 9 A ' AD= 6B < . A= <;(@1@ ' F =1@<;' CA ' C< EA= < ' =B991F1< 6 '6 E' ' D< =A9<6 ' ADA @ <@ ' 6<PA @<;' G<;F<1I<@ CA ' 1 ' EA=' <F<==A; ' ' @1==1GA < A '1@<A' CA ' AG 6< 3= 9 ; B <= E B6@ ;<I1I<(A @ E1 6;' C1= < 1 ' C< GBD61=C<@(1 ' C< A . < 9 C< 661<@ I<;<1? =(A' F<6<D;A <@ @<F6A;A 1 ' CA ' C< ' E ;@@ <I<;' <? 1A < E1 C AG 6< ' (AGA; < ;' #I1 C A ' . < . D<;' 9 C1= 9A . 16 (CA ' C =< I<;<1? = E B6@ ;<F ? 1=< A @ ?BA;A << C< F = 1 B 1 ' EC1FC +;A F< =C B6@ FC =< 9 ;' C<;=<69(A @ CA ' C< < A < EA= 1 I1 <@ '9 ; .' A' G; I1=1 A6 ? I<; . < ' ' G; I1@< 9 ;' C< ? I<; . < ' 9 C< F B ; ' A @ ' G;WGA;W< C< <E' F = 1 B 1

I' M@A@ ABG@7@$ +A' S@7@ <M@ ; L@7B7 B3 DAA$> ' #@N>+C@7 ' $; C <M@ $+ 'B3 7DAA$> ' 7@C@7$?Q $##$> ; ' #$B LBA$<$B+ B3 <M@ ; L@7B7 B3 DA<7$>' $+ M$A' AB+0$+0#>S(A' ?>L$<>#BD#C M>G@ J@@+ <BB C$3 ?D#<] M@ M>C M>#<@C ' <M@7@3B7@ ' >< $RB+

' 9' C =<' =BG;< . <' AF 1 =' EC1FC' =< @' CB @<; B=' <FC <=' C; B?C' C<' A?<=' (B 3'A ' D= AF6<' EC1FC' C<' CA@' '9 ;<=<< ' F . G6< <@' C<' @<= ;BF 1 ' 9' C1=' 9 ; B <=&' A @' = ;BF>' 9; .' C1=' CA @' C1=' C1 C<; '1 I1 F1D6<' =E ;@
+' <M@' ; $CA<' B3' M$A' 7@G@7A@A ' >A' $+' <M@' ; $CA<' B3' M$A' <7$D ; LMA ' >LB#@B+' S>A' #BG@C' >+C' SB7AM$LL@C' JK' M$A' AB#C$@7A ' M@' #><<@7' $; 0' L7<B3<M@' LD<@C' >##' M$A' ; $A3B7<D+@A' <B' <7@>AB+ ' >+C' ?BD#C' +B<' D+C@70'
A<>+C' <M><' $<' S>A' LBAA$J#@' M@' ?BD#C' J@' G>+aD$AM@C' ><' <M@$7' G
M@>C ' M@+' <M@' ; L@7B7' 7@G$@S@C' <M@' G>7$BDA' ?B7LA' >A' <M@K' >77$G@C' ><' B+<>$+@J#@>D ' <M@' L7$G><@' AB#C$@7A' >+C' +B+0?B ; ; AAB+@C' B33$?@7A'
$CD<@C' M$; ' S$<M' @+<MDA$>A<$?' >??#> ; ><$B+&' S>0$D+ ' <M@$7' S@>LB+A ' >+C'
C@ ; >+C$+ ' <B' J@' #@C' B+' <B' >7$A ' M@$7' @+<MGA>A ; ' MBS@G@7 ' S>A' +B<'
AM>7@C' JK' <M@' ADL@7$B7' B33$?@7A ' SMB ' M>G$+ ' 7B0S+' B#C '$+' <M@' ; $CA<' B3' $+1
+D ; @7>J#@' J><<#@A ' A><$><@C' G$<M' #B7K' >+C' MB+BD7A ' >DC' G@>7K'0B3' 3B##B G0'
$+ ' CD7$+ ' AB' ; >+K' K@>7A' >??7BAA' <M@' SMB#@' B3' D7BL@ ' 37B ; ' <M@' > DA' <B'
/, , ' >#<$?' 37B ; ' <M@' $#@' <B' &) 7' > +' $; L@7$BDA' ; >A<@7' SMBA@' $+ 0'
A><$>J#@' > ; J$<$B+' M>C' @G@7' 7@+C@7@C' $<' $; LBAA$J#@' <B' @+RBK' <M@' 7@S>7CA' M@'
M>C' AMB G@7@C' DLB+' <M@ ; ' +B ' A> G' >##' <M><' <#$@K' M>C' GB+' A#$LL$+ ' 37B ; '
<M@$7' 7>AL ' M@K' 3@>7@C' <B' 7$AQ' <M@' 7@ ; +>+<' B3' <M@$7' 3B7<D+@A' JK' >'
A@#@AA' >+C' C@AL@7><@' 7@A$A<>+?@J >+C' 3@>7@C' @G@+' <B' BJ<>$+' >' 7$?<B7K'
SM$?M' ?BD#C' JD<' J@' <M@' L7@#DC@' B3' >' 370@AM' A@7$@A' B3' >CG@+<D7@A ' >+C' S#$$?M'
BD#C' JD<' J@' BJ<>$+@C' ><' <M@' 7$AQ' B3' A@@$+ ' <M@$7' MBDA@A ' <M@$7' 3> ; $#$@A '
>+C' <M@$7' C@>7@A<' $+<@7@A<A' JD7$@C' J@+@><M' <M@' 7D$+A' B3' <M@' ?>L$<>#' $+'
3#> ; @A ' D ; ; B+@C' <B' >' ?BD+?$#' B3' G>7' JK' <M@' ; L@7B7 ' ><' <M@' ; B ; @+<'
&GM@+' <M@' GMB#@' B3' <M@' >7 ; K' M>C' J@@+' >AA@ ; J#@C' >+C' S>A' 7@>CK' <B'
$>7?M ' <M@K' C$C' +B<' M@A$<>@' <B' C@?#>7@' <B' >LB#@B+' <M><' $3' M@' L@7A$A<@C'
M$A' C@AL@7><@' @+<@7L7$A@' M@' ; DA<' +B<' 7@?QB+' DLB+' <M@$7'
AA$A<>+?@' @' D+C@7A<BBC' <M@ ; ' >+C' ?BD#C' +B' #B+ @7' $+0
96 6?<' 1 ' A ' 166B=1 ' 1 @1 ?' C1 . =<69' A6 <&' =B; ; B @<@' 9' . A;F ? '
' !" D7BL@' $+' >7 ; A ' >+C' B+' <M@' LB$+<' B3' J@$+ ' >J>+CB+@C 5
C<' 166B= ;1 B=' F . GA 1 =' E1 C' IC ;A' C<' CA@' = ' 9 < ' D<< ' I1F ;1 B=&'
#1=' ;<= 6B 1 ' ?AI<' EA ' <' 99<;<@' 'AD@1FA <' 1 ' 9AI B;' 9' C1=' = &' EC '
'I B6@' ;<1? ' 1 . @<;' C<' ;<?< F ' 9' C1=' . C<;&' A @' =< ' AB6A1 F B; &'
1#< &' AF@ A6@&' A @' A; . Y' ' +A;1=&' ' <? 1A <' ' C1=' &2)' DA=1= 6

4' P' $A' 7@>#' BJR@?< O' A>KA') ' M$@7A ' P' S>A' <B' >$+' <SB' B7' <M7@@' C>KA ' >+C' <M@+' <B'
@>Q' B33' <M@A@' +@ B<$><$B+A' S$<M' <M@' ASB7C i
<' M@' 3B7 ; @7' S>A' <M@+' ><' AAB+@ ' MD<' >LB#@B+' >D<MB7$V@C' @K' >+C') >?CB+>#C' <B'
Q$Q@' M$; ' S$<M' <M@ ; ' $3' <M@K' AMBD#C' <M$+Q' $<' +@?@AA>7K

> ! > % ' ! ! +' ! ' D ' ' '

AG 6< ' @1@' ' A=' < ' > E' A ' C<" G<;16' 9' C1=' G =1 1 (' A @' EC16= C<' D<61<I<@' CA ' C<' EA=' 6 ' C;<A < <@' D ' C<' ;<9B=A6' 9' C1=' . A;=CA6=' A==1= ' C1 . (' <' 9' C< . ' CA@' A61'<A@ ' D< ;A <@' C1 . ' A1 C6<==' ' C1=' @B

7@>AB+' B3') >70' ; B+<' DQ@ B3' A @' C<' C B;' ¸ 9' A' = 6@1<;(' A; . (' =<@BF<@' D ' C<' G;<==1 ?' = 61F1 A 1 =' 9' A66< ;A @(' A @' C<' 99<;' 9' A =G6< @1@' 9 ; B <' B @<;' C<' (B;D =(' CA@' =<F;< 6 'A;;A ?<@' E1 C' FCEA; M< D<;?' ' =B;;< @<;' ' C1 . ' C<' 1 . G ; A 'G =1 1 ' EC1FC' C<' FFBG1<@' A ' == <(' A @' EC1FC' F I<;<@' A1 <D6<AB(' C<" . G<; ;(' A @' C<' A; . ' 1 C B ' AD= 6B <6 ' ;<I >1 ?' C1=' G; . 1=<(' C<' =B=G< @<@' 1 =' <P<FB 1 ' EC16= ' C<' E< ' E1 C' C1=' F 66<A?B<=' ' @<9< @' A ' +A;1=' C<' FAB=<' 9' A;1A' B1=A' A @' C<' - 1 ?' 9' . <(' A @';<=<;I<@' ' C1 . =<69' C<' ;1?C ' 9' AF 1 ?' AFF ;@1 ?' ' F1;F 1 . = A F<=' (B ' EC16= ' C<' EA=' <? 1A 1 ?' 1 ' +A;1=' C1=' ?< <;A6=' CA= < <@' ' <P<FB <' C<' 91;= ' ;@<;=' EC1FC' C<' CA@' ?1I< ' %<9<F 1 ' 9' C<' JB1 <@' C<1;' G =1 1 =(' A @' . A;FC<@' C<' =1P C' F ;G=(11 CF 11b8' EC1FC' EA=' F . G =<@' 9' C<1;' ; G=(' ' <;AA166<= Y' C1=' =B@@< ' @<9<F 1 ' 9' A' C1;@' GA;' 9' C<' A; . ' GB ' A ' < @' ' A66' <DA <' E1 C' ;<=G<F ' ' C<' AD@1FA 1 ' 9' AG 6< ' 1 ' 9AI B;' 9' C1=' = ' A @' C<' <?< F ' 9' A;1A' B1=A ' 6<PA @<;' 6@' AB6A1 F B;' A @' C<' . A;0 =CA6=' CA ' AG 6< ' . B=' . A><' A ' B F @1 1 A6' AD@1FA 1 (' A @' CA (' 1 ' ;< B; (' C<' =C B6@' D<' ;<A <@' E1 C' A66' @B<' F =1@<;A 1 ' C<' <? 1A ;=' E<;<' F =<JB< 6 '=< 'DAF>' ' A1 <D6<AB' '@< . A @' A @' D A1 ' =BFC' A ' AD@1FA 1

_ C< ' 1 9 ;6 <@' 9' C<' ;<A= ' 9' A; . (' A @' C<' @<9<F 1 ' 9' C ' =1P C' F ;G=((AG 6< ' ?AI<' ' BCIA;@' =1? ' 9' C<' G 1? A ' < . 1 =' EC1FC' ;<' C1=' 1; ' = B6 ' +;1@<' < AD6<@' C1 . ' ' F<A6' C1=' ?;1<9' A @' A ?<;' A; . (' C1=' 6@' 9<66 E GBG16(' BG 'EC .' C<' CA@' =C E<;<@' Cd' ?;<A <=' 9AI B;=(' EC .' C<' CA@' FA66<@' C1=' FC16@(' A @' EC .' C<' CA@' D; B?C ' BG' 1 . @<;' C1=' E ' < (' EA=' C<' 6 ' . A (' =A1@' C<' . G<; ;(' EC .' Cd' F B6@' 'CAI<' D<61<I<@' FAGAD6<' 9' D< ;A 1 ?' C1 . ' <' @1@' ' @<F<1Id' C1 . =<69' E1 C' ;<=G<F ' ' C<' F =<JB< F<=' 9' C1=' @<9<F 1 ' 1 C' D=' 9 ;F<=' EC1FC' = 1 ' ;< . A1 <@' B @<;' C1=' F . . A @(' C<' F B6@(' @ BD 6<==(' D ' ;< 1;1 ?' BG ' C<' 1;<(' G; 6 ?' A' =A ?B1 A; ' F 961F 'N DB ' 1 ' F B6@' 6

I' M@' <7BBLA' B3' <M@' A$N<M' ?B$LA' C$A?BG@7@C' ><' @7A>$##@A' <M><' <M@' ; L@7B7' S>A' JB(' <7>K@C ' >+C ' 7A+ ' > >$+A<' <M@$7' @+@7>#A ' C@ ; >+C@C' <B' M@' #@C' J>?Q' <B' B+<>$+@M#?>$#']) >7 ; B+<' MBS@G@7 ' ><' <M@' 7@aD@A<' B3'<M@' >##$@C' ABG@7@$ +A ' M>A<@+@C' <B' aD@## <M$A' 7@GB#M' >+C' <M@' C@3@?<$B+' B3' <M@' A$N<M' ?B7LA' S>A' ?B ; L#@<@ ' P' K' M$A' ?B+CD?<' ><' @7A>$##@A ((A>KA') ' M$@7A ' P') >7 ; B+<' <BBQ' DLB+' M$; A@#3' <M@' SMB#@ 7@ALB+AJ#$<K' B3' <M$A' ++3B7<D(+><@' B??D77@+?@ ' >DC' ; DA<' J@>7' <M@' J ; 0C@+' B3' $<' $+' <M@' @K@A' B3' LBA<@7$<K

, 0, ,/ T X ') ' ' ' "!

FC 6 ' ;<= 16 ' 9 A ' A . D1 1 ' EC1FC C EC 6 E ;6@ F B6@ ' CA I =A 1=91<@ A @ 9 A ' B D B @<@ G;1@ EC1FC E 9 B @ 1 =<69 F . G<66<@ ' AFF<G ' A DA;;< ' ; F> 1 ' C <@1 <;;A <A ' 1 ' <PFCA ?< 9 ;' C D6<= ' <. G1;< 1 ' C B 1I<;=<' @ C1= EA= ' A66N 9 ;' C 6<9 ' ;A F< @1 . 1 1=C<@ 1 ' =1M A @ <PCAB= <@&'A @ CA@ ' <I< ' D<< ' AD6 ' G;<0 =<;I 1 = ?6 ;1 B= 96A?' A= 1 ' 9 ;' C1= C< CA ' C CA@ D<< ' I1F 0 ;1 B= 1 ' A66 C FAG1 A6= 9 B1 G< CA ' C CA@ CB . 161A <@ = ' . A ' >1 ?= D; >< ' BG = ' . A ' < . G1;<= ?A1 <@ = ' . A ' D6 @ ' I1F ;1<= @<F1 . A <@ <I<;A6 ?< <;A 1 = =G16 ' C D6 @ 9 C;< . 1661 = 9 . < A @ A==B . <@ C] ;<=G =1D161 ' 9 1 B . <;AD6 FA6A 11 1<= ' ' C<=< G 1? A ' ;<F 60 6<F 1 = E<; A@@<@ ?6 . ' A 1F1GA 1 = 9 =CA . <9B6 B ;A?<= A ' C DA @= 9 C <PA=G<;A <@ G GB6A 1 = 9 C B C<; ' G; I1 F<= EC1FC C I B6@ CA I ' ;AI<;=< ' C1= EA ' <P16<N A @ C1= = 1F1= . ' ADA @ <@ C1 . 619 AGG<A;<@ ' C1 . ' 1 =BGG ; AD6< < DA@< A@1<B ' AB6A1 ' B; CA >< @ CA ' 9A1 C9B6 9;1< @ 9 ;' C B A6 <;AD6 @<I 1 ' C CA@ @1=G6A <@ EA;@= C1 . ' EC< ' = ' . A ' C<;= CA@ ADA @ <@ C1 . ' N ?< 6 ' @1= . 1==<@ C1 . ' N A @ C< ;< . A1 1 ? A6 << ;<= 6I<@ ' G;<=<;I C1 . =<69 D ' =B1F1@< 9; . ' C1= 9;1?C 9B6 9A < A @ C CB . 161A 1 ? <F<==1 ' 9 =1? 1 ? D1= E ' @< C; < . < ' A @ CA ' 9 C1= @<=F< @A =

AG 6< ' CA@ E ;<F . ;=F ' C G 1= ' E1 C EC1FC C CA@ G; I1@<@ D1 . =<69 @B;1 ? C =F E FA . GA1? ' A= A =<FB;1 ' A?A1 = ' 9A661 ? A61I 1 ' C CA @= 9 C B==1A = A @ EC1FC C CA@ FA;<9B66 ' A < . G = +;<=<;I<@ A= A 6A= ' ;<= B;F<' <G;<GA;<@ 1 ' E1 C C1= XI ' F . . #YV# DA @= @;A >1 A @ C;<E C1 . =<69 BG ' A F BFC 1 ' C D<61<9 CA ' C <=C B6@ <I<;' ;1=< A?A1 ' (B ' C1= A < . G ' EA= 1 ' IA1 9 ;' C< D1G= 9 1 . < CA@ @1 . 1 . =C<@ C< I1;B6< F< 9 C G 1= A @ A9 <;' A I1 6< ' F;1=1= C< 9<66 1 ' A @<<G 6< CA;? ' EC1FC FA6 . <@ C1= @<=GA9 ' A @ @1==1GA <@ C< = . G . = 9 AGG; AFC1 ? @<A C ' 1= =A1@ CA EC< ' C< . G<; ;' AE >< A= 1=C<@ A ' 91 @1 ? C1 . =<69 A61I< C< ;< . A1 <@ 9 ;' . < . . < = G< =1I<' A @ C< ' <PF6A1 . 1 ? [' O @ @ <= ' E166 1 @<=1? <@ C1 . =<69 ' C1= <E @<= 1 Y < G6AF<@ I1 C B ' 9B; C<;' ;<=1=0 A F<QC1= =1? A B;< ' C< ;<A A @ = . < @A = 6A <; ' C< " C 9 G;16 A ' A1 <D6<AB 1 ' C< G;<=< F< 9 C ;<1? ' . . 1==1 <;' FCA;?<@ E1 C C< FA;< 9 C1= G<;= > 6<AI< 9 C1= D;AI< A; . ' AI1 ? ;AI<13=<@ C1= AGA; . < =9 66 E<@ D ' C< %B><= 9 1F< MA A @ (A==A C1= 9A1 C9B6 O< <;A6= %; B (<; ;A @ A @ (<661A;@ (A; '

4 ' ; >+DA?7$L< B3 , ,/ ' JK >7B+ >$+ ' >LB#@B+(A L7$G><@ A@?7@<>7K

E<< ‘ 1 =‘ E ‘ @<=1;<=‘ A @‘ C =<‘ 9‘ C<‘ G;1 F<=‘ EC =<‘ ;<= ;A 1 ‘1 ‘ CA=‘ CA16<@‘ ‘; .‘ C< F<‘ C<;<‘ A;1=<‘ ‘ C<‘ <‘ =1@<‘ 9 61=C‘ C G<=‘ 1 . G;B0 @< ‘ C;<A =‘ ;A=C‘ G; K<F =‘ A @‘ ‘ C<‘ C<;‘ ?6 . ‘ A P1< ‘ @1=A99<F0 1 ‘ A @‘ F =G1;AF1<=‘ C< ‘ ‘ C<=<‘ = B;F<=‘ 9‘ F1 I 16‘ @1= B;DA F<=‘ C<;<‘ A;<‘ A@@<@‘ 1 ‘ C<‘ . 1 @=‘ 9‘ C<‘ G< G6<‘ C<‘ 9<<61 ?‘ 9‘ CB . 161A 1 ‘1 =<GA;AD6<‘ 9; .‘ C<‘ ;<= ;A 1 ‘ EC1FC‘ CA# D<< ‘ AFF . G =C<@‘ A @‘ EC< ‘ C<‘ ;<= ;A0 1 ‘ 1=‘ G;<F<@<@‘ D ‘ ?;<A ‘ A 1 A6‘ @1=A= <;=‘ A @‘ 1=‘ =BGG ; <@‘ D ‘ 9 ;<1? ‘ DA < =‘ C< ‘ D<9 ;<‘ A‘ E ;@‘ CA=‘ D<< ‘ B <;<@‘ ;‘ A‘ =1 ?6<‘ 9AB6‘ D<< ‘ F . . 1 <@‘ 1 ‘ . A ‘ D<‘ F =1@<;<@‘ F<; A1 ‘ CA ‘ 9 ; . 1@AD6<‘ ;<=1= A F<‘ A @‘ G<;16‘ A;<‘ 1 . . 1 < ‘ BFC‘ E<;<‘ C<‘ B 9 ; B A <‘ F1;FB . = A F<=‘ CA ‘ 1 ‘ ‘ AFF . GA 1<@‘ C<‘ ;<= ;A 1 ‘ 9‘ C<‘ (1BD =‘ A @‘ D<9 ;<‘ A ‘ 9‘ C<‘ . < . D<;=‘ 9‘ CA ‘9A . 16 ‘CA@‘ =< ‘9 ‘ ‘ C<‘ = 16‘ 9‘ ;A F<‘ 1 ‘ EA=‘ G ==1D6<‘ ‘9 ;<=<<‘ C<‘ D= AF6<=‘ EC1FC‘ C< ‘ E B6@‘ CA I<‘ ‘ I<;F . <‘ A @‘ C<‘ = ; .‘ #C1FC‘ EA=‘ ;<A@ ‘ ‘ DB;= ‘ I<;‘ C<1;‘ C<A@=

‘ C<‘ C<A@‘ 9‘ C<‘ - A6‘ C B=<‘ B1=‘ A 1=6A=‘ : A I 1<;‘ EC .‘ C<‘ < A <‘ FA66<@‘ BG ‘ ‘ ;<1? ‘ B @<;‘ C<‘ A . <‘ 9‘ B1=‘ : I 1 ‘ EA=‘ < @ E<@‘ E1 C‘ A‘ KB@1F1 B=‘ . 1 @‘ A @‘ EA=‘ JB1 <‘ BK<<# 3A ; $#K '1AGAD6<‘ 9‘ AGG;<F1A 1 ?‘ C<‘ =G1;1 ‘ 9‘ C1=‘ A?<‘ <‘ CA@‘ AFJB1;<@‘ 1 ‘ C1=‘ B C‘ A=‘ B ‘@<‘ +; I< F<‘ A‘ F<; A1 ‘ G GB6A;1 ‘ D ‘ I 1 ?‘ 1 ‘ C<‘ =<F @‘ # ==< . D6 ‘ 9‘ C<‘ =1D6<=‘ 9 ;‘ C<‘ @ BD6<‘ ;<G;<=< A 1 ‘ 9‘ 61<‘ C1;@‘ <= A <‘ ℕ # @ C<‘ CA@‘ . ;< I<;‘ EC16= ‘ 1 ‘ <P16<‘ D6 ‘ ;<=1= <@‘ C<‘ ;<GBD61F‘ A @‘ G; <= <@‘ A?A1 =‘ AG 6< ‘D ‘ F6A1 . 1 ?‘ C1=‘ ;1?C =‘ ‘ C<‘ F; E ‘ %;1I< ‘ 9; .‘ C<‘ 1 < ‘ C<‘ CA@‘ 9 1 . @‘ A ‘ C B;AD6<‘ AJ ℕ6B . ‘ 1 ‘ ?6A @‘ # IC<;<‘ C<‘ CA@‘ 6 ?‘ =1 F<‘ 61 I<@‘ A ‘ A; E<66‘ E1 C‘ A‘ 9<E‘ 9;1< @=‘ EC< ‘ C<‘ @1=A= <;=‘ =B99<;<@‘ D ‘ C<‘ ;< FC‘ A; . ‘ G< <@‘ ‘C1 . ‘ C<‘ GA C‘ ‘ C<‘ C; <‘ = ‘ 9‘ C<‘ . < . D<;=‘ 9‘C1=‘ 9A . 16 ‘ =1<B;‘ C<‘ ; . ‘@3 ; 1=‘ C1=‘ D; C<;‘ C<‘ %B><=‘ @3 ? B6< . <‘ A @‘ @<‘ (<;; ‘ = =‘ 9‘ =1<B;‘ f1 @ 91 A ‘ C<‘ E ‘ G;1 F<=‘ 9‘ C<‘ C B=<‘ 9‘ @<‘ C<‘ 9A C<;‘ A @‘ ?; I @ ‘ 91 I C<;‘ 9‘ C<‘ B 9 ; B A <‘ %B><‘ @3 ?C1< ‘ CA@‘ 6 ‘ . A@<‘ C< . =<6 I <=‘ > E ‘ D ‘ C<1;‘ I A1 ‘ <99 ; =‘ ‘ ;1B . GC‘ I<;‘ C<‘ <I 6B 1 ‘ D ‘ . <A =‘ 9‘ F1 I 16‘ EA;‘ A @‘ 9 ;<1? ‘ A; . =‘ 6 <‘ 9‘ A66‘ C<‘ G;1 F<=‘ 9‘ C<‘ B=<‘ 9‘ (B;D ‘ C<‘ %B><‘ 9‘ ;6<A =‘ C<‘ 91;=‘ G;1 F<‘ 9‘ C<‘ D6 @‘ CA@‘ D ; <‘ C<‘ A 1 A6‘ F 6 B;=‘ A @‘ 9 B?C ‘ C<‘ < < . 1<=‘ 9‘ ;A F<‘ . ?=‘ C<‘ . < . D<;=‘ 9‘ C<‘ A6‘ 9A . 16 ‘=G<F1A66 ‘ ‘ D<‘ @1= 1 ?B1=C<@‘ EA=‘ C<‘ @AB?C <;‘ 9‘ ;@=‘ : ‘ A @‘ A;1< 1 < <‘ . A; ;1<@‘ ‘ C<;‘ F B=1 ‘ C<‘ %B><‘ @3 ? B6s . <‘ A‘ G;1 F<==‘ E ; C ‘ D ‘ ;<A= ‘ 9‘ C<‘ ?;<A <=‘ 9‘ C<;‘ = B6‘ SIB@ 9‘ C<;‘ . 1=9 ; B <=‘ 9‘ @<<G‘ A @‘ B 1I<;=A6‘ 1 <;<= ‘ DB ‘ EC ‘ CA@‘

<9 ;< 61< F F<==1 ' 9' A' ?< <;A6' G<AF<' EA=' =1? <@' ' 61< 8;@' 9' G;16
' C< 9 66 E1 ?',@A ' B1=' : ,' A;;1I<@' 1 ' Ç1=' >1 ?@ . '
A @' EA=' ;<F<1I<@' D ' 0< <;A6' A1= ' A ' A6A1=' EC1FC' C<
< <;<@' A . 1@=' C< < CB=1A= 1F' AFF6A . A 1 =' 9' C< G GB0
6AF<' A @' 9; .' EC< F<C< =< ' B ' 9 ;' +A;1=
_S<A6 B=' 9' C1=' C<;<@1 A; ' G;1I16<?<=' C< - 1 ?' E B6@' 'AF> E6<@?<'
CA ' C< < A <' CA@' A' ;1?C ' '1 . G =<' A' F = 1 B 1 'BG ' 11 . N' DB ' <I<;0
C<6<==' 1<6@1 ?' ' C< <A; <= ' ;<G;<=< A 1 =' 9' C< . G<; ;' 6<PA @<;'
A @' C< A@I1F<' 9' A66< ;A @' C<" G;<F<@<@' C1=' < ; '1 'C1='
FAG1 A6' D 'A' F<6<D;A <@' @<F6A;A 1 ' @A <@' A ' A1 B< ' D ' @A<@ A1 '
EC1FC' C< ?BA;A <<@' ' ;A F< C< 61D<; 1<=' G; . 1=<@' D ' C<
< A ;1A6' = 1 B 1 ' ' C< 9 66 1I1 ?' @A ' C< 8;@' A ' C< - 1 ?'
C< %BFC<==' @3 ? B6s . <' A @' . =' 9' C< +;1 F<=' 9' C<
9A . 16 ' 9' C< (B;D =' < <;<@' +A;1=' 1 ' = 6< . 'G; F<==1
' 11 '9 ;<1? '= 6@1<;' AGG<A;<@' 1 ' C< ; A6' F ;]?<' EC1FC' EA=
<=F ; <@' D ' C< 6@' ?BA;@' ' EC .' . BFC' 9' C< GBD61F' 1 <;<=' F< ;<@'
A @' EC =< A1;' 9' @<<G' . <6A FC 6 ' F ;A= <@' = ; ?6 ' E1 C' C< G GB6A;'
K ' C]' F; ' 9' [1I<' 6A' ?A;@<z~' EA=' 9 < ' . 1 ?6<@' E1 C' CA ' 9'
[1I<' 6<' 1'z~' B1=' : ' C E<I<;' ;<F<1I<@' <I<; EC<;<' A' EA; .'
;<F<G 1 ' 9 ;' C< @<F6A;A 1 ' 9' A1 B< 'D<?A 'A' <E' <;A' 9 ;' ;A F<'N
;<61A F<' EA=' G6AF<@' ' C< ; A6' G; . 1=<=' A @' C< C<A; =' 9' C< G< G6<
<;<' G< ' 'C G<
C< - 1 ?' F 91; . <@' 1 '1 =' A ;1DB <=' C< F =B6 A 1I<' =BG<;1 ;' F B F16'
AC61=C<@' D 'C1=' D; C<;' B @<;' C< A . <' 9' C< A6' B F16' A @' 1 '
BD ;@1 A 1 ' 'EC1FC' A C<;' F B F16' CA ' 9' C< 1 1= <;=' <P<;F1=<@'
'9C< <P<FB 1I<' G E<;' E ' I<; '@199<;< 'A @' GG =1 <' < @< F1<=' =G<<@16 '
D<FA . <' I1=1D6<' A @' 1 'EA=' G<;F<1I<@' E1 C' A P1< ' CA ' ?< C<;' E1 C'
;BA 'I<; '< . 1 < ' . < ' =1 F<;<6 'A AFC<@' ' C< = 1 B 1 ' C<;<' =A'
. <' EC 'E<;<' I<; ' GG =<@' ' C< 61D<;A6' =G1;1 ' A @' EC 'CA@' D<< '=<6<F <@'
6h ' C< . A;FC' ' AFF B ' 9' G<;= A6' 61>1 ?' ;' 9' =<;I1F<=' ;< @<;<@'
D<9 ;< C< <I 6B 1 ' 9' C1=' 6A <;' B . D<;' E<;<' %A . D;A '
C ' CA@' D<< ' . A@<' CA F<66 ;' 9' ;A F<' A @' - <<G<;' 9'
C< <A6=' C< DDW' <=JB1<B' C61 1= <;' 9' C< <;1 ;' '
@' C< B ' @<' (6AFA=' 1 1= <;' 9' C< - 1 ?3=' B=<C 6@' 0< <;A6'
1#BG 'EA=' 1 1= <;' 9 ;' A;' N A66< ;A @' 9 ;' ;<1? ' 99A1;=' N A6 B<'
9 ;' C< AIA6' %<GA; . < 'N (A; ' B1=' 9' 1 A F<' N A @' (<B? ' 9'
+ 61F<

GBD61F E ;=C1G C 1 I1 6AD161 G; G<; C <'1;;<I FAD161 G C A>#@A G C A 1 A6 G; G<; C C ;<=G =1D161 G C . 1 1= <;=& C A BA6 I 1 ? G AP<=& A @ C GA4B < G C 1 <;<= C A 1 A6 @<D & A @ ;< <= AD61=C<@ C 6@ D161 '1 C<1;' ;1?C = EC16= '1 . A1 A1 <@ C =< G C <E C1= FCA; <;& EC1FC EA= D< =E ; D C - 1 ? G C ;< FC A C G<;1 @ G C<1;' F =<F;A 1 & 9B69166<@ 1 ?< <;A6 C E1=C<= <PG;<==<@ @B;1 ? C G;<F<@1 ? E< 91I < <A;= D C . = < 61?C < <@ . < 1 ;A F< . . <@1A <6 A9 <;' 1 CA@ D<< ;<A@ C CA F<66 ;' G; @BF<@ C @<F;<< E611FC <= AD61=C<@ C CA . D<;' G +<<;=& EC1FC EA= F . G =<@ G . = G C 6@ < A ;=& G C A;=CA6=& A @ A ?;<A B D<;' G @1? 1 A;1<= G C 6@ F B; A @ D6<==<

C G; . B6?A 1 G C1= FCA; <;' EA= AFF . GA 1<@ D < =<;1 B= 9AB6 C - 1 ? CA@ ;<9B=<@ AFF<G '1 A= A F @1 1 G C1= <6<IA 1 C C; <& A @ CA@ ?;A <@ 1 =1 . G6 A= A AF G C1= = I<;<1? _ I66& A @ CA@ #@A <@ 1 C 1 < << C <A;' G C1= ;<1? C1= EA= 1? ;< A66 CA CA@ A>< G6AF< 1 ;A F< @B;1 ? E< 91I < <A;=& A @ <PG =< C FCA; <;' G<; D G6AF1 ? 1 A C . <;F G C =BG;< . < G E<; 9AF & 19 C< G;1 F< EC ?;A <@ C1= F = 1 B 1 M16 ;<?A;@<@ 1 C1 . =<6 A= A' D< <I 6< AF < . A A 1 ? 9; . C1= E ? @ G6<A=B;< A @ = 6< AB C ;1 & 1 EA= D< 9<A;<@ CA A 6 A@I1=<@ >1 ? . 1?C = . < @A C1 >< C1 . =<6 A 61D<; ;<I >< 1 D I1; B< G C< =A . < C<;<@1 A; A @ 1 A61< AD6< AB C ;16 & C< 91;= ;<=B6 = G C1= 9AB6 E<;<& <PA??<;A < C< G;< . A B;< A P1< G = . <& A @ 1 96A . < C< AB@AF1 B= C G<= G C<;=& A @ 1 1= 1 CA A;< D< A ;1DB <@ C< . 1=9 ; B <= D EC1FC _C< ;<I 6B 1 EA= AFF . GA 1<@ Y

C< @A ?<; B= A B;< G C< ?; B @ E611FC C< . A;FC ;<= <@ C1= G E<;' = D<FA . < . A 19<= B . D<;' G G<;= = EC % A ?<;= G C CA@ D<< @1==A 1=91<@# E1 C C< ;< B; G C< (B;D =& Q#<;< G<;=BA@<@ CA C< 6A <;& EC16= AFF<G 1 ?& 1B =G1 < G C< . d 6I<=& C< = A < G C1 ?= F;<A <@ D C< <I 6B 1 & @1@ ;<?A;@ 1 #' A 1;;<I FAD6< 9AF C< ;<F<1I<@ C< <E ;@<;' G C1 ?= E1 C #= ;B= & A @ C< G;<==& 1 . G6AFAD6< A @ 1< & =G;<A@ AD; A@ C<1;' #A; . = A @ C;<A = (B EC16= C< AB C ;1 1<=& A;D1 ;A;16 &1 <;G;< 1 ? < G C< A; 1F6<= G C< F = 1 B 1 & =BDK<F <@ C< K B; A6= EC1FC @1@ C1= A' F< = ;=C1G C< GA; 1=A = G C< 6@ ;@<;' G C1 ?= 1 @B6?<@ 1 C<1;' E K B; A6= 1 I1 6< < B F1A 1 = G C<1;' E I1<E=& A @& A= A6EA = CAGG< = EC< C< CD<; G C< G;<==1= =B=G< @<@& C< 1 < .

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/ , 8 ! > 5' @ ' : !>' $ ' 8 * - ' U<

G<;A <' A; 1F6<=' ICIFC' 1 ' @1@' ' =BGG;<==' E<;<' A ;1DB <@' ' C<' 1 = 1?A0 1 ' 9' C<' O I<; 6< ' . G;B@< ' <PG;<==1 ' 9;<JB< 6 ' <=FAG<@' C<' 61G=' 9' C<' . 1 1= <;=' A @' ? I<; . < ' 991F1A6=&' A @' C =<' EC ' A==B . <@' A=' <PF6B=1I<6 ' C<1;' E ' C<' A . <' 9' A61= =' <PG6 @<@' 1 ' D1 <;' 1 I<F 1I<=' ' 6 ' A?A1 = ' C<' FCA; <;' A @' 1 =' ?BA;A <<=&' DB 'A6= ' A?A1 = ' 1 =' ; A6' AB C ;&' EC . ' C< ' AFFB=<@' 9' CAI1 ?' D<CAI<@' B KB= 6 ' A @' B ?;A <9B66 ' EA;@=' C<' < . 1?;A =' D ' @<F6A;1 ?' C<' =A6<' 9' C<' A 1 A6' G; G<; ' 1;;<I FAD6<' ' EA=&' 1 ' C<;' ;<=G<F =&' A6 . = ' 1 . G ==1D6<' CA ' C<' - 1 ?&' 1 ' =G1 <' 9' C1=' <PG<;1< F<' A @' 1 <661?< F<&' =C B6@' ' = . < 1 . <=' 1<6@' ' 6@' G;<KB@1F<=&' A @' =BD . 1 ' ' C<' 1 96B< F<' 9' 6W=' < 61?C < <@' A @' 6<==' ' G;B@< ' . < . D<;=' 9' C1=' 9A . 16 &' A=' E<66' A=' ' CA ' 9' C<' . < ' EC ' CA@' ;< B; <@' E1 C' C1 . ' 9; .' <P16<&' A @' EC ' G ==<==<@' C1=' F 96@< F<' C<' 6A <;&' C; B?C' C<' - 1 ?3=' GA; 1A61 &' ;" D ' I1; B<' 9' C<1;' A F1< ' 1 6<=&' D A1 <@' . =' 9' C<' ?;<A ' 991F<=' 9' C<' F; E &' A @' =B;; 1 . @<1' C<' . A;FC' 1 ' A' F6 =<' F1;F6<' B1=' : ' F 1 . 1 <@' C<' 9AB6 ' 9' ;<0 <= AD61=C1 ?' A ' A' ?;<A ' <PG< =<' C<' 6@' . 161 A; ' AGG< @A?<=' ' C<' Y# B=<C 6@&' C<' F . GA 1<=' 9' C B=<C 6@' ; G=' A @' C<' . B=JB< <<;=&' EC1FC' E<;<' . G =<@' 9' B ?' . < ' 9' 9A . 16 &' EC ' E<;<' A66' ;<F ? 1=<# A=' 991F<;=' A ' C<' F . . < F<. < ' 9' C<1;' FA;<<;&' 1 ' C<' G;<=< F<' 9' A ' A; . '1 ' EC1FC' @B;1 ?' E< ' <A;=' . 161 A; ' ;A >' CA@' 6 ' D<< ' D A1 <@' A ' C<' G;1F<' 9' D6 @' A @' ?6 ;1 B=' =<; I1F<=

A ' @<F;<<=' E<;<' 1==B<@' EC1FC' E<;<' <1 C<;' 99< =1I<' ' C<' A; . ' A @' C<' G< G6<&' ;' G<@@61 ?' A @' I<PA 1 B=' PG1A ; ' . B; 1 ?&' EA=' ;@<;<@' 9 ;' C<' A6' I1F 1 . =' 9' C<' ;<I 0 6B 1 A; ' = ; . =&' A @31 ' C<' 6A ?BA?<Y' 9' 991F1A6' G; F6A . A 1 =' A=' E@# A=' 1 ' CA ' 9' C<' GB6G1 &' C<' EC 6<' 9' ;A F<' =<< . <@' ' D<' 1 F<==A 6 ' AFFB=<@' 9' C<' A ; F1 1<=' F . . 1 <@' @B;1 ?' C<' ;<1? ' 9' <;; ;' Dd F6<;1FA6' GA; ' ;@<;<@' C<' G CF<' ' G;<I< ' A ' F . . <;F1A6' ;A =AF 1 d' ;' 6AD B;' ' B @A =' A @' 9s <' @A =' N A' . <A=B;<' EC1FC' EA=' G;A1=<E ; C ' 1 ' G;1 F1G6<&' DB ' ;< @<;<@' B 1 . <6 ' A @' B G GB6A;' D ' C<' . A <;' 1D' EC1FC' 1 ' EA=' FA; ;1<@' 1 ' <99<F ' C<' =BGG;<==1 ' 9' C<' F ;@A ' IAd <? 1A <@' A ' . <&' A @' C<;<' =<< 1<@' ;<A= ' ' 9<A;' CA ' C<' F6<;? ' E B6@' D<' ;<1 = A <@' 1 ' C<1;' 6@' G;1I16<?<=' A ' G;1<= =' <PG;<==<# C G<=' 9' ;<F I<;1 ?' C<1;' 1 6<=' A @' @ . A1 =&' A @' CB @<;<@' A?A1 = ' Dd G;<=< ' G; G;1< ;=' 9' C<' A 1 A6' G; G<; 'N A @ ' 91 A66 &' . A ' DI=C Gd' G< 6 ' <PG;<==<@' C<1;' A@C<;< F<' ' C<' DB ' 9' + G<' +1B=' ' EC1FC' ;d' <= AD61=C<@' C<' ;@<;' 9' C<' S<=B1 = ' C<' A; . &' = A 1 <@' 1 ' D=FBY'#

@>?<$B+>77 C@?7@@A

C< =1 1 ?=' CAI1 ?' C<< ' F6 =<@' A @' A@K B; <@' ' C< 7 61' A &' C< 1 1= <;' F 1 B<@' ' AF ' E1 C B ' A ' E<66 F F<1I<@' G6A &' A @' E1 C B ' F1 C<;' B 1 ' ;' = ;< ? C' 9' GB;G =<' A66< ;A @' ' 6 ?<;' =A ' 1 ' C< B F16&' A=' C ' A ' C1=' 1 . <' ;<G;<=< <@' ;A F<' 1 ' C< 0 @ ! ' ' ?;<=='9' I<;<1? =&' EC1FC' CA@' D<< ' A==< . D6<@' =<I<;A6' $@D+A . C=' A ' 1< A&' 9 ;' C< GB;G =<' 9' @1I1@1 ?' C< 1 . . < =<' =G 16=' F 60 6<F <@' D ' iG 6< ' C1=' ?;<==&' G;<=1@<@' I<;' D ' C< . G<; ;' 6<PA @<;&' A @' 1 ' EC1FC' &' @<' < < . 1FC' 9 ;' B= ;1A&' A= 6<;<A?C&' A @' A9 <;' C1 . ' <661 ? &' 9 ;' ?6A @&' A @' A;@< D<;?' 9 ;' +;B==1A&' <P<;F1=<@' C< . = '1 96B< F<&' CA@' A6;<A@ ' <PF1 <@' E1@< =G;<A@' A @' @<<G' @1=F < ' ' EA=' ' C< <P < ' 9' <;;1 ; &' DB ' C< B . D<;' 9' = B6=' 1 ' <AFC' F1 ' A @' '<AFC' F 1 . ; N' EC1FC' EA=' '9 ; .' C< DA=1=' 9' C< @1I1=1 N ' AFF B ' EA=' A>< ' 9' C< @1= 1 F 1 =' <= AD61=C<@' D< E<< ' G GB6A 1 =' D ' @199<;< F<=' 1 ' C<1;' . A <;=&' C<1;' A 1 A6' FCA;AF <;1= 1F=&' C<1;' ;<610 ?1 =&' ;' =G<F1<=' 9' F . . <;F<N A @' C< 1 <;<= =' 9' C< A <=' 9' C< <F @' ;@<;' E<;<' F = A 6 ' =AF;191F<@' ' C =<' 9' C< #<A ' G E<;=' C< B 9 ; B A <' -1 ?' 9' AP &' EC =<' F;1 . <' EA=' C1=' 91@<61 ' ' AG 0 6< &' EA=' @<=G 16<@' 9 ;' C< G; 91 ' 9' +;B==1A' A @' B==1A&' C< 91;= ' 9' EC . ' D A1 <@&' D<=1@<' C< 6<F ;A <' 9' AP &' E<@1=C' + . <;A 1A&' A @' A' ?;<A ' G ; 1 ' 9' C< <;;1 ; ' D< E<< ' C< C1 <' A @' C< <B=<' B==1A' AFJB1;<@' C< 0;A @' %BFC ' 9' A;=AE&' B @<;' C< A . <' 9' C< -1 ?@ . ' 9'+ 6A @&' A @' ' F @1 1 ' 9' ;B61 ?' 1 ' 6 ' D ' . <A =' 9' A' =G<F1A6' A @' F = 1 B 1 A6' ? I<; . < ' B= ;1A' ;<F I<;<@' . DA;@ ' A @' A66' 1 =' 6@' G ==<==1 =' ' C< E ' =C ;<=' 9' C< @;1A 1F ' B=FA ' EA=' ?1I< ' ' C< ;FC@B><' <;@1 A @N' 0< A' ' C< -1 ?' 9' A;@1 1A&' A @' +A; . A' ' C< <P . G;<==' A;1A' B1=A&' DB ' 6 ' 9 ;' C<;' 619< Y' C< 9 ;<1? ' G 61F ' 9' A66' C< A <=' 9' 0<; . A ' EA=' ;< @<;<@' =BDK<F ' ' C< @<F1A =' 9' A' <@<;A6' %1< &' 9' EC1FC' B= ;1A' EA=' ' CAI<' C< G<;G< BA6' G;<=10 @< F ' E<@< ' D A1 <@' ;EA ' A ' C< <PG< =<' 9' %< . A;>&' 9; .' IC .' A6=' ' <61? 6A @' CA@' D<< ' A>< ' D ' ?6A @' C1=' 6A <;' G E<;& < ;1FC<@' D ' C< F 6 1<=' 1 ' CA@' =<1M<@' @B;1 ?' C< EA;& A6= ';< A1 <@' C< AG<' 9' 0 @' G<&' C< =6<' 9' ;A F<&' A6 A&' A @' C< 1A '' =6A @=' ' @<I <@' ?;<A ' FA;<' ' C< 9 ; . A 1 ' 9' C< >1 ?@ .' 9' C< E' B ;1<=&' EC1FC' EA=' F . G =<@' 9' 66A @' A;1@' (<6?1B . & B @<;' C< ;B6<' F9' C< B=<' 9' ;A ?<&' A @' EC1FC' =<< . <@' '1 ' ' 99<;' A' 9 ; . 1@AD6<' DA;0 ;1<;' A?A1 =' ;A F<' ' A6 ' C< <?A 1 =' E<;< =<FB;<@' ' C< + G<N

I' M@' 7@G@7A$B+' B3' <M@' +?MK' B3' >7 ; >' S>A' $G@+' <B' <M@' * D@@+' B3' <7D7$>

> E ! ' !+ !+' ! >' ! + ' ' ' '

A I' 1 ' E1 M<;6A @' C<' ?;<=='. A1 A1 <@' C<' = A <' 9' C1 ?='EC1FC' CA@' D<< ' <= AD61=C<@' D ' C<' F ' 9' <@1A 1 ' 9' "8&' 1 ' =G1 <&' 9' A66' C<' <99 ; =' 9' C<' A ='EC .' C1='F<6<D;A <@' F ' CA@' @<G;1I<@' 9' C<1;&' ;1?C =' A @' G;1I16<?<=' C;<<' <E' A =&' C =<' 9' <B9FC16 <6&' O6A;1=&' A @' A6A1=&' E<;<'9 ; . <@' 9' = . <'9;A? . < =' 9' AG 6< 3=' < . G1;<&' A @' ;A1=<@' C<' A6' B . D<;' 9' A =' ' E< E ' ' C<' =A . <' 1 . <' @<F6A;A 1 ' EA=' . A@<' 9' C<' <B ;A61 ' 9' E1 M<;6A @&' A @' 9' = . <' ?;<A ' G;1 F1G6<=' 9' 1 <; A 1 A6' 6AE' ;<6A 1I<' ' 61<' AD 61 1 ' 9' C<' =6AI<' ;A@<' A @' C<' 9;<<' AI1?A 1 ' 9' AI1?AD6<' ;1I<;='N G;1 F1G6<='EC1FC' A;<' = 166' 1 '9 ;F<&' ' C<' A@IA A?<' 9' C<' FAB=<' 9'CB . A 1 &' 9'A66' C<' G< G6<=' 9' B; G<&' A @' C<' ;<F ? 1 1 ' 9' EC1FC' EA=' C<' D<=' C1 ?' <99<F <@' D ' C1=' F<6<D;A <@' ?;<==

C<' D B @A;1<=' 9' ;A F<' CAI1 ?' D<< ' <= AD61=C<@' D ' C<' G<AF<' 9' +A;1=&' CA ' G E<;' CA@' DB ' A' I<; ' =<F @A; ' 1 96B< F<' I<;' C<' ;<= 6B0 1 =' 9' C<' ?;<==' N <I<; C<6<==&' A66< ;A @' GG =<@' C<' < F; AFC0 . < =' 9' 1 1A&' A @' 1 ' AFF ;@A F<' E1 C' C<' 1 = ;BF 1 =' 9' B1=' : &' G 1 <@' B ' CA ' C<' 1=6A @' 9' 6DA' EA=' ' F6 =<' ' A6 ' A @' ;A F<&' A @' 1 =1= <@' CA ' AG 6< ' =C B6@' D<' ;< . I<@' ' A' ?;<A <;' @1= A F<' ' <' A6= ' @< . A @<@' CA ' B;A ' =C B6@' D<' @< C; <@&' A @' CA ' 61<' B=<' 9' (B;D ' =C B6@' D<' ;<G6AF<@' 1 ' G ==<==1 ' 9' C<' >1 ?@ .' 9' AG6<=' A @' 9' C<' %BFC ' 9' +A; . A ' 1='<99 ; =' CA@' A ' 91;= ' DB ' 61 6<' =BFF<==' N DB ' B;A ' IA=' 1 9 ; . <@' 9' C< . &' A @' D<1 ?' KB= 6 ' A6A; . <@' E1 C' ;<=G<F ' ' C<' ;< < 1 ' 9' C1='G ==<==1 =&' C<' D<FA . <' ;<F F16<@' E1 C' C<' ?;<A ' . A ' EC .' C<' CA@' ADA @ <@&' 1 I1 <@'C1 .' ' A6 &' A @' G; . 1=<@'C1 . ' G E<;9B6' =BGG ; ' BFC' EA=' 1 ' <D;BA; &' 7&' C<' ?< <;A6' G =1 1 ' 9' B; G<&' EC< ' A ' A= 1 . @1 ?' <I< ' =B@@< 6 ' = A; 6<@' 1 ' 61; B?C B ' 1 =' 6< ? C' A @' D;<A@ C

' 61<' 2 C' 9' <D;BA; ' A' D;1?' 9' EA;' EA=' =A161 ?' FAB 1 B=6 ' BG' C<' H ;' 9' AG ' <@1 <;;A <A &' 9 66 E<@' D ' =1P' 61?C ' DA;>=' ' L B1<' ;<1? <@' 6<A '9; .' 6DA' @<F>&' ' EC1FC' F 1@@' D<' =<< ' C<' ?61 <;' 9' A; . =&' A @ 1 ' F A1 <@' A' 9<E' CB @;<@' . < ' 1I1 C' D; M<@'9AF<=&' A @' 9' A' . =' . A; 1A6' D<A;1 ?' P1 B=6 ' A @' A < 1I<6 ' 61< ' =FA <@' E1 C' C<1;' < <=' <I<; ' =A16' EC1FC' AGG<A;<@' ' C<' C ;1M ' A ' 9' C<1;' C<; 1F' F B < A F<=' GA6<@' A=' C< ' @1=F I<;<@' 1 ' C<' @1= A F<' = . <' =C1G=' 9' EA;&' A @' A6;<A@ ' C<' E ;@=' 6DA' A @' ;< B; 'GA==<@' . B; 9B66 '9; .' . B C' ' . B C' (B ' 1 ' C<' . 1@=' 9' C< . ' C<;<' EA=' <' . A ' EC ' EA=' AGGA1'F 6 ' B . I<@

;' C = 16<' ' C<' 8;@' A;FC' C<' F; ==<@' C<' %B;A F<' C<' 1= <; ' D;1@?<(' 61; B?C' A' A;; E' @<916<(' EC1FC' A' I<; ' 9<<D6<' ?A;;1= ' 1 ' C<' 9 ; ;<==' . 1?C ' CAI<' C<6@' A?A1 = ' F =1@<;AD6<' 9 1F<='N DB ' C<' 9 ; 'EA=' 1 . @<9< @<@(' A @' AG 6< ' GA==<@' C; B?C' B GG =<@' ' A66' C<' F1 1<=' 9' C<' B C' C<' AB C ;1 1<=(' = ;BF>' E1 C' = BG ;' A ' C<' <E=' 9' C<' . G<; ;3=' 6A @1 ?' A @' 9' C1=' AGG; AFCN > <E' ' ECA ' ' ;<= 6I<' (' D<1 ?(<JBA66 '1 FAGAD6<' 9' AF 1 ?' 1 ' F F<; ' ;' 9' . A>1 ?' C< . =<6I<=' 5 D< <@' ' =<< . <@' ' C< . ' A=' @A ?<; B=' ' GG =<' AG 6< 'A=(' A66 E' C1 . ' ' A@IA F<' B GG =<@' ' EA=' ;<= 6I<@(' C E<I<;(' CA ' 0;< D6<' =C 16@' D<' @<9< @<@N A @' A66' C<' @1=G =AD6<' ; G=' 1 ' %ABGC1 W' E<;<' F 0 F< ;A <@' C<;<' ' @< AFC . < '9 ; . <@' 9' IA;1 B=' =G<F1<=' 9' ; G=(' A @' F . . A @<@' D ' A' ;<= 6B <' 991F<;(' A . <@' <==A;@(' EA=' =< ' = . <' 6<A?B<=' D< @' 0;< D6<' ' @<= ; ' C<' D;1@?<' 9'+ CAB ' C1=' ;@<;' CA@' ' D<< ' <P<FB <@' EC< (' ' C<' 2 C' A;FC(' C<' . G<;1A6' A@IA F<@' ?BA;@(' B @<;' 0< <;A6' A . D; <(' ;<AFC<@' C<' {;<(' A @' >' BG' A' G =1 1 ' C<;<' . . A @<;' <==A;@' 9<66' DAF>' E1 C' C1=' @< AFC . < '1 ' A' = ; ?' G =1 1 N' F6 =<@' C<' ; A@' A?A1 = ' A . D; <3=' = 6@1<;=(' ;<9B=<@' ' C 6@' A ' F . . B 1FA 1 ' E1 C' C1 . (A @' C;<A < <@' ' 91;<' 19' C<' A@IA F<@' AG 6< ' = 'A9 <;EA;@=' ;<AFC<@' C<' =G N' =AE' C<' @A ?<;' >LB#@B+'><' 9' C<' =1 BA 1 (' A @' G<;F<1I<@' CA ' C<' @<F1=1I<' . . < ' ;A(CA@' F . <' <' ;@<;<@' C1=' ?;< A@1<;=' ';<I<;=<' 61<1;'A; . =(' A @' A@IA F1 ?' A6 <' 'E1 C1 'C<A;1 ?' @1= A F<' 9' C<' DA A61 ' EC1FC' D6 F><@' C1=' GA C(' C<' G< <@' C1=' I<;F A ' A @' =A1@(' [' 6@1<;=(' 1 '1=' 'Z @ ' B' ;<F ? 1=<' . <'(' 9' C<;<(' D<' <' A . ?=' B' EC ' E1=C<=' '>166 'C1=' . G<; ;(' C<;<' C<' 1=' <' F . <= E1 C' DA;<' D;<A=' ' 99<;' C1 . =<69' ' B; E<AG c ' @ . 1;A 1 'A @' < CB=1A= . ' >' G ==<==1 ' 9' <I<; 'C<A; ' C<' F; ' 9' [' 1I<'63 . G<;<B;'Z A; =<(' A @' EA=' I' C B=A @' 1 . <=' ;<G<A <@' C<' E ' D @1<=' 9' ; G=' 9;A <; 1M<@(' C 1= <@' C<' =A . <' 96A?(' A @' . A;FC<@' ?< C<;' ' 0;< D6<' ' A9 <;EA;@=(' 1 ' C<' 0;<B D1 ' <1?CD B;C @' 9' 1M1 <(' 6 <6' 6A' (W@];<' CA= < <@' BG' E1 C' C1=' ;<?1 . < ' ' K 1 ' (AGA; <(' EC .' C<' B 9 ; B A <' B ?' . A ' A6 . =' E ;=C1GG<@' 0;< D6<' A @' =' G< <@' C<1;' ?A <=' 1 ' =BFF<==1 (' A @' 1 ' C<' 6A <;' F1 ' B ' @3 ; 1=' EA=' = ' B <;6 ' @<=<; <@' CA ' C<' CA@' ' 6<AI<' 1 ' E1 C' A' A ?6<' A < @A ' C<' = 6@1<;=' <I<; EC<;<' ;<=G @<@' ' C<' AGG<A6' 9' C<1;' 6@' ?< <;A6N < 3=' F ;G=' 9 66 E<@' C<' <PA . G6<'N < ' C1 . =<69' EA=' 1 @BF<@' ' @ ' C<' =A . <N AG ' A;=CA6 < ' 6< ' < . D;AF<@' C1 . (A @' F 1 B<@' C1=' . A;FC' EA;@=(' +A;1=' =1<B;

E' >&' 1 ' C< G;<=< F< 9' C< E ' CA . D<;=&' A ' A C' ' ><<G' 1 I1 6A <&' C< FCA; <;' 9' C< = 1 B 1 'N DB '1 ' EA=' 1 ' IA1 ' CA ' A;=CA6' ; 1<;' A @' C< ?A;;1= ' 9' A' +];< ;<G;<==<@' 1 ' C< <A=' A' ;<I 6 ' <PF1 #' D ' 0< <;A6=' A66< . A @' A @' <9<DI;< %<= B< <='N 1 ' IA1 ' CA ' A;=<166<=' < <;?< 1FA66 ' @<F6A;<@' 1 '9AI B;' 9' C< (B;D ='N 1 ' IA1 ' CA ' C< %B><' @3 ? B6< . <' 1 ' A ?B<@ F' A @Q' A@A . <' A ' (;@<ABP&' C< F1 '1 'EC1FC' C< (B;D =' E<;<' 91;=' G; F6A1 . <@&' ?A C<;<@' A' 9<E' ; G=' 1 ' =BGG ;' 9' C< ; A6' FAB=< , # AG 6< ' EA=' A6;<A@ ' 6 'A' 9<E' . A;FC<=' @1= A ' 9; .' C< B16<;1<=

B1=' ! ' ' C<6@' A' ;<I1<E' 1 ' +A;1=&' DB ' C< ; G 'E B6@' ';<=G @' ' C< F; ' 9' [' 1I<' 6<' 1'z`' ' C< A;FC'B @<;= @' C1=' =16< F<&' A @& 1<6@1 ?' ' C< 9 ;F<' 9' <F<==1 &' C< G;<F1G1 A <6 ' JB1 <@'

961<=' 37B ;' >7$A' NB' ! M@+<' C1=' GA6AF<' ' C< 1?C ' 9' C< ! C' A;FC'A ¸@' CA= < <@' 0C< &' EC<;<' A66< ;A @' = ' A9 <;EA;@=' K 1 <@' C1 .' &' A @' EC1 C<;' C< EA=' A6= ' 9 66 E<@' D ' A' 9<E' G 61 1FIA =' EC ' G<;F<1I<@' A66' C< ;A=C <==' 9' AG 6< 3=' < <;G;1=<&' A @' 1 ' EC =<' < <=' C< 1 <;<= =' 9' ;A F<' E<;<' 1@< 1FA6' E1 C' C< B=<' 9' (B;D ' ' ' C< <I< 1 ?' 9' C< '' C' A;FC' AG 6< ' ;< < <;<@' C1=' FAG1 A6&'

>LB#@B+'7@1 @+<@7A' >7$A') >7?M' ,2, . E1 C B ' CAI1 ?' 91;<@' A' =1 ?6<' =C ' 1=' ;AG1@' . A;FC' CA@' D<< ' <' F 1 B<@' ;1B . GC&' A @' < &' G<;CAG=&' A' = I<;<1? ' ;<=B . 1 ?' G ==<==1 ' 9' C1=' F; E ' CA@' <I<;' 9 B @' C1 . =<69' 1 ' A' . ;<' F;1 1FA6' G =1 1 ' 61A ' C< . G<; ;' ' C1=' ;< B; ' 9; .' C< =6A @' G9' 6DA&' @B;1 ?' CA ' G<;1 @' EC1FC' 1=' = ' B 9 ; B A <6 ' F<6<D;A <@' A=' C< &' B @;<@' %A =&' +;A F<' EA=' <PCAB= <@' A @' @1I1@<@' D ' 9AF ' C<' A$<D><$B+ ' 1 ='N C< 1 . . < =<' . AK ;1 ' 9' < 61?C < <@' ;< FC . < & =A 1=91<@' E1 C' C< G; . 1=<=' 9' C< FCA; <;' 9' B1=' : &' EC1FC' C< ' C G<@' ' =<<' 9A1 C9B66 ' FA;;1<@' B &' ;< . < . D<;<@' E1 C' <;; ;' C< . G<;1A6' @<=G 1= . 'N F1I16' EA;' C;<A < <@' C< B CN' C<' 9 ; . 1@AD6<' < @W<' A; =<' 1 ' 1 =B;;<F 1 'N C< A' FC<KAFJB<61 =&' C< AG1 AB@=&' C< B 1FCA . G=&' ;A1=<@' C<' (FA?<'N C< E ;>1 ?' F6A==<=' 1 ' +A;1=&' =&' A @' C<;' F1 1<=' D<?A ' ' B <;' =1 1= <;' F;1<=' EC1FC' ;<FA66<@' C< E ;=' 1 . <=' 9' C< <I 6B0 1 'N A @' C< IqC 6< 9' B; G< EA=' = 166' 1 ' A; . =' AG 6< ' CA@' AFF<G <@' C< ;<A ' 9' +A;1=&' A @' CA@' G; <= <@' C1=' 1 < 1 ' 9' ><<G1 ?' C< G<AF<'N DB ' C1=' F B;1<;=' E<;<' A;;<= <@' ' C< 9; 1<;=&' C< 661<@' I<;<1? =' G6AF<@' ';<61A F<' ' C1=' A==B;A F<=&' A @' D ' A' 9;<=C' ;<A &' =1? <@' ' C< 7 C' A;FC&' ;< <E<@' A . ?=' C< . =<6I<=' C< A661A F<' 9' CAB . ' C< ?;<==' 9' 1< A' @<F6A;<@' AG 6< ' ' D<' B ' 9' C< GA6<' 9' GBD61F' A @

, , & , , . T ') ' !

qA 9 I AE‹ A @' A' . 16 ' ; G=' E<;< G;<GA;1 ?' F< . ;< ' G B;' @ E ' BG ' ;A F<' ' EA=' <F<==A; ‹ C<;<9 ;<‹ CA ' AG 6< ‹ 19' C< E<;< ' ;<1? ‹ =C B6@' ;<F<1I< 9; .' C< CA @=' 9' I1F ; ' 9;<=C' A @' D6 @ ' F =<F;A 1

R 1 ' =BFC' F1;FB . = A F<=' A ' A6 . = ' 1 . 61 11 <@' AB C ;1 ' EA=' <F<==A; ' ' 5 C< C<A@' 9' C<' 0 I<; . < 'N DB ‹ F = ;A1 <@' A=' C< EA=' ' F F161A < GBD61F' G1 1 ‹ AG 6< ' = B?C ' 9 ;' C< =BGG ; ' 9' C< F = 1 B 1 A6' GA; ‹ . A ' 9'EC =< . < . D<;=' FC<;1=C<@';<GBD61FA '=< 1 . < =‹ A @' E B6@' ' CAI< FA;<@' ' < ;B=' '<I< ' A' . . < A; ' @1F A p;=611G' ' C< C<; ' 9' C< C' (;B . A1;<' C< . G<; ;' 96A <;<@' 1 =' 6<A@<;=‹ =<6<F <@' 9; .' A . ?=' C< . ' . = ' 9' ' C1=' 1 1= <;=‹ A @' B=<@' C< 6A ?BA?< 9' A' 9;1< @' EA;@=' C< A 1 A6' 61D<; 1<=' (B ' =BFC' 6A ?BA?< 1 ' C1=' . B C' EA=' DB ' A' 9<<D6< . <A =' 9' =BFF<==‹ 9 ;' GBD61F' G1 1 ' 1=' 6 ' 1 96B0 < F<@' D ' 6A ?BA?< EC1FC‹ 19Y 1 ' D< ' =1 F<;<‹ . A ' A ' 6<A=' D< AFF<G <@' A=' =BFC

C< 91;=' 1 G<;1A6' @<F;<<=‹ @A <@' A ' =‹ E<;< < <;?< 1F ' C< ' @<F6A;<@' C< CA . D<;=' 9' B1=' : ' @1== 6I<@'N F I ><@' C< 6<F0 ;A6' 66<?<=' 1 ' A ' <P ;A ;@1 A; ' A==< . D6 ' 9 ;' C< GB;G =< 9' . @19 1 ?' C< F = 1 B 1 ' 9‹ C< < . G1;< 1 ' C< 1 <;<= =' 9' C< G< G6<'N AD 61=C<@' C< 6@' D6<==<'N @<F6A;<@' A66' C< G; G<; ' 9' C< (B;D =' =<JB<=0 ;A <@'A' A @' G; =F;1D<@' <6<I< ' G<;= =‹ A . ?=' EC .' E<;< A < ;A @' 'A @& A; . ' <=1? 1 ?' C1 . =<69' ' = .' A661A F< 9 ;F<@' BG ' C1 . ' D ' <F<==1 ‹ AG 6< ' A@ . 1 <@' 1 ' C1=' F B F16' C< F<6<D;A <@' I< 0 1 A61= ‹ A; ‹ A=' 1 1= <;' 9' C< <;1 ;‹ A @' AGG 1 <@' 1 1= <;' 9' + 61F<‹ BFCW‹ %B><' 9' ;A ‹ A' . A ' C< ' 1 96B< 1A6' E1 C' C]' = 10 B 1 A61= =‹ AZ@' C< 6 ' <' FAGAD6<‹ 1 ' EA=' =A1@‹ 9' @1;<F 1 ?' C< G 61F<' 1 ' 1 . <=' 9' =B@1' @1961FB6 ' 1 A66 'C< ;<JB<= <@' C< F<6<D;A <@' +BD610 F1= ‹ (< KA . 1 ' = A ‹ ' @;AE' BG' A ' ['AF ' @@1 1 A6' ' C< = 1 B0 1 =' 9' C< . G1;< `' C1=' AF ' F;<A <@‹ 1 ' C< 91;= ' G6AF<‹ E ' 6<?1=6A 1I< CA . D<;=‹ C =< 9' C< +<<;=' A @' C< <G;<=< A 1I<=‹ C< 91;= 'C<;<@1 A; ‹ . 1 A <@' D ' C< . G<; ;‹ A @' C< =<F @' <6<F 1I<' C< C<;' F6AB=<=' 9' C1=' AF ' E<;< ;A =F;1G =' 9' C< G;1 F1GA6' G ; 1 =' 9' C< FCA; <;' 9' ' B1=' : ' AG 6< ' =BD . 1 <@' 1 ' ' C< G< G6<' 9 ;' AFF<G A F<‹ A @' A' . 1661 ' F =< <@' '1 ‹ EC16= '9 B;' C B=A @' I< B;<@' ';<K<F ' 1 ' C< . G<; ;' =E ;< ' ><<G' 1 I1 6A < C1=' <E' F = 1 B 1 ' 1 ' A' = 6< . ' A==< . D6 ' 9' @1<' 6<F ;A6' 66<?<=' ' C< CA . G' @< A1‹ EC<;< C< <A?6<=' E<;< @1= ;1DB <@' A . ?=' C< ;<?1 . < =‹ CA . G' @<

' ' <## ' ! "') ' : !>' ' * -'

A @' EC<;<' AG 6< ' AGG<A;<@' E1 C' A66' C<' G . G' 9' C<' . G1;<' C<'

$J@7>#
@#@B<$B A

<6<F 1 =&" EC1FC' E<;<' A6 . =' < 1;<6 '1 '9AI B;' 9' C<' F '
= 1 B 1 A6' GA; &' EW;<' F F6B@<@&' A @'5 C<' CA . D<;' 9'
<G;<=< A 1I<=' A==< . D6<@' ' C<' 8;@' 9' SB <' B @<;' B 9AI B;AD6<'
AB=G1F<=' 9 ;' C<' . G<; ;' A' A < <';<AGG<A;<@' C<;<' ' C<' G 61 1FA6'
= A?<&' A9 <;' E< ' <A;=' 9'C B;AD6<';< ;<A ' C<' I <=' 9 ' C<' G;<=10
@< F 'E<;<' @1I1@<@'D< E<< 'C1 . 'A @' A KB1 A1=&' A @'1 'E #' A KB1 A1=&' EC '
EA=' . =' C = 16<' ' C<' 1 . G<;1A6' ? I<; . < &' EC ' D A1 <@' 61<' . AK ;1
161 A; ' . <A=B;<=' E' FFBG1<@' AG 6< 3=' E6K1G6<' A < 1 ' ' Ca#
B C' =<< . <@' JB1< &' 9 ;' A@A . <& A9 <;' CAI1 ?' 9 ;' = . <' 1 . <' 99<;<@' A'
F B;A?< B=' ;<=1= A F<' 1 ' (;@<ABP&' CA@' D<< ' F . G<66<@' D ' 0< <;A6'
6AB=<6' ' ADA @ ' CA ' F1 ' A @' JB1 &' C<' >1 ?@ . ' C<' %B><' @3 '
? B6s . <' CA@' D<< ' ' = . <' @<?;<<' =BFF<==9B6&' A @' A@ . A@<' A';AG1@' A;1@'
G<;16 B=' FA . GA1? ' ' C<' C <'N DB 'H && G&DA @ <@' SD 'C1=' ; G=&' C<' 5
CA@'9 B @' C1 . =<69'=B;; B @<@' A @' . A@<' # G;1= <;&YA @'' CAI1 ?' D<< ' =< '
A '61D<; D ' C<' . G<; ;3=' ;@<;=&' C<' CA@' 6<9 ' # <G Y' 6#B ' A' < @W<'
EA=' = 166' 1 ' A' = A <' 9'1 =B;;<'< 1 &' A @&' A6 C B?C' ><G '1 'WC<F>' D ' 0< <;A6'
A . A;J <&' 1 ' F . G<66<@' AG 6< ' ' @< AFC' E< ' C B=A @Y' . < '3 '
FFBG 'A @' ;<@BF<'1 ' ' C<' . <A 1 . <' C1=' 9 ; B <=' CA@' A6;<A@ ' =B99<;<@'
A' <;;1D6<' D6 E' 1 ' A6 &' 9 ;' C<' 1 . G;B@< ' B;A &' 1 ' =G1 <' 9' C1=' A@I1F<&'
CA@' A AF><@' C<' B= ;1A =' A ' 6< 1 &' 6 =' C1=' A; . 'A @
> B#@+$+B' C1=' F; E &' A @' E' EA @<;<@' AD B ' >' 9B?1 1I<&' EC =' C1='
IA CJB1=C<;=' ;<G6AF<@' C<' (B;D =' ' C<' C; <' 9' C<
N
E ' 1F161<=' C<=<' G;<61 . 1 A; ' <I< =&' = ' @1=A= ; B=' ' C<' 1 . G<;1A6'
FAB=<&' F . G<66<@' AG 6< ' 'A==< . D6<' A 'A; . ' ' C<' = B C<; '9; 1<;'
9 ;' C<' GB;G =<' 9' = GG1 ?' C<' G; ?;<=' 9' C<' < < . 1<=' EC .' B;A>'
F B6@' A6 <' CAI<' C<6@' 1 ' FC<F>&'CA@' C<' ' D ' C1=' 9 61=C' ;A=C <=' G;<0
F1G1 A <@' C1=' ;B1 ' ' B; G<' EA=' E' A@IA F1 ?' E1 C' . < AF1 ?' 9; 'N
) >7?M' B3' C<' ?61=C' B @<;' ' <661 ? &' A @' C<' +;B==1A =' B @<;
< <. ''3B7B@E' (6_#F66<;&' FFBG1<@' (<6?1B . 'N A'9;A 1F' < CB=1A=. '9 ;'61D<; '
<PF1 <@' C<' 0<; . A ' 1I<;=1 1<=' A?A1 =' (AGA; <'N C<' EC 6<' 9' 0<;0
. A ' ; =<' A?A1 =' C1 . ' A ' 61<1;' =B . . =&' A @' D<C1 @' 1 ' C<' B==1A '
F 6B . =' A @' A; A;' C ;@<=' E<;<' A6;<A@ '1 ' . 1
AG 6< 'A?A1 ' F 66<F <@' E1 C1 ' A' 9<E' @A =' A' 9 ; . 1@AD6<' A; . '9; .
C<' = 16' 9' ;A F<' FF ;@1 ?' ' C1=' E ' FA6FB6A 1 =&' C<'
) $#$<>7K'
BL@7><$B+A;'
'D+B ' , .
& $' 07
;<JB1;<@' =1P' CB @;<@' C B=A @' . < '9 ;' C<' GB;G =<' 9' IA '
JB1=C1 ?' B; G<&' A @' C<' CA@' A6;<A@ ' ?A C<;<@' ?< C<;' D

G; #?1 B=' <99 ; =' A ' A; . ' 9' C;<' CB @;<@' C B=A @' 9' 611=' B . D<;' A' CB @;<@' A #' E< ' C B= . 1@' EW;<' . A;FC<@' BG ' (<6?1B . ' ' C<' C' 9' SB <' C<' =<' B ' 1 ' G<;= '9 ;' C1=' A; . ' '?1I<' DA 6<' ' <661 ?0 ' A @' (6BFC<;' EC ' E<;<' <AFC' A ' C<' C<A@' 9' 1 < ' C B=A @' . < ' <' C G<@' 'D<' AD6<' ' IA JB1=C' C< . ' =<GA;A <6 ' D ' C; E1 ?' C1 . =<69' =B@@< 6 ' D< E<< ' C< . ' A9 <;' EC1FC' C<' E B6@' D<' 9;<<' ' . << ' C<' B=0 ;1A =' A @' K B==1A =' ' ' C<' * C' C<' =BFF<<@<@' D ' . <A =' 9' A' ;AG1@' A @' =<F;< ' . A;y#' . Y(B;G;1=1 ?' C<' +;B==1A =' 1= 6A <@' 9; .' C<' ?61=C' A @' A' 5=A ? G A; 'DA 6<' >' G6AF<' ; B @" C<' I166A?<' 9' 1? ' C<'DA 6<' 9 C<' G6A1D=' 9' +6<11;B=' A6EA =' ?6 ;1 B=' 9 ;' C<' ;< FC' A; . = CI+9B==f1 . =' E<;<' IA JE=C<@' D ' AG 6< ' A @' 6 =' A' C1;@' 9' C<1;' A; . ' ADD N' C1; Y' C B=A @' . < ' 9' EC . ' <1?C << ' C B=A @' E<;<' D1C<@' ;' I=; BC@<@'N & x ' B=A @' ;< FC' ; G=' A6= ' 9<66' ' 611=' 9A A6' _' <6@' ' C#<' ' == . <' @A ' A ' A' 9<E' 6<A?B<=3 @1= A F<' A C<;' ><#@B3' DA 6A' >' G6AF<h A' # <' : $,' LBA ;< (;A=' ' C<' ; A@' 9;J .' " 1 1P6<; 1' ' (;B==<6=' D< I<<' A' G ; 1 ' 9' C<' ?61=C' 9 ;F<=' A @' C<' ;< WC' ;SK G=1B @ ' < ' C1=' G =1 1 ' EA=' A' I<; ' 1 . G ; A ' <' A=' A' ;A66 1 ?' G 191 '9 1# C<' IA;1 B=' F ;G=' 9' C<' ?61=C' A; . 'N < ' F B6@' ' A><' 1' ; . 16' A9 <;' C<; 1F' <99 ; =' EC1FC' =BFF<<@<@' 9A A6' C<=1 A 1 =' A @' C<' DA 6<' ;< . A1 <@' A' @;AE ' <' <I<; C<6<==' AG 6< 3=' G;1 F1GA6' DK<F ' CA@' D<< ' D A1 <@' D ' C<' ;<=B6 =' 9' C<' DA 6<' 9' C<' * C' 9' SB <' 9 ;' C<' CA@' =<GA;A <@' C<' < < . 3=' E ' A; . 1<=' C<' +;B==1A =' E<;<' D<A < ' A @' C<' ?61=C' . 1?C ' A6= ' D<' = ' D<9 ;<' 1 ' F B6@' D<' G ==1D6<' 9 ;' C<1;' ; B <@' 1@61<=' ' A@IA F<' ' C<1;' A==1= A F< C<' . G<; ;' @< AFC<@' 'C1=' ;1?C ' 0; BFC ' E1 C' C1;6 9 I<' C B=A @' . < ' F . . A @<@' B @<;' C1 . ' D ' 0W;A;@' A @ A @A . . <' A @' ;@<;<@' C1 . ' ' ><<G' C1 . =<69' 1 ' F = A ' F . . B 1FA 1 ' E1 C' C1 . =<69' D ' C1=' 6<9 ' EC16= ' A ' C<' =A . <' 1 . <' C<' I1? ; B=6 ' GB;=B<@' C<' +;B==1A =' C<' . 0 G<; ;' C< ' . A;FC<@' 1 ' G<;= ' E1 C' C<' ;<= ' 9' C1=' 9 ;F<=' D ' LBA ;< (;A=' ' . << ' C<' ?61=C' EC ' 9<66' DAF>' A @' FFBG1<@' C<' G =1 1 ' 9' ' A1 S<A '1 ' 9; ' 9' C<' 9 ;<=' 9' 1? 1<=' EC1FC' EA=' =<I<;A6' 6<A?B<=' 1 ' <P < ' A @' F I<;<@' C<' F1 ' 9' (;B==<6=' ' C<' 2 C' A' 9;1?C 9B6' = ;.' D; ><' BG' C<' ; A@=' @<6A 1 ?' C<' . A;FC' 9' C<' ;< FC' ; G=' 9 ;' . A ' C B;=' = ' CA ' 1 ' EA=' 6 ' A ' C<' F6 =<' 9' C<' @A ' A @' A9 <;' ?;<A ' 9A 1?B<#' CA ' C< ' F B6@' ;<AFC' C<' 9 ' 9' ' A1 S<A ' EC1FC' EA=' FFBG1<@' D ' C<' ; G=' B @<;' ;@' <661 ? ' C<' ?61=C' A; . ' EA=' GA; 6 ' C1@@< ' 9; .' C<' ;< FC' D ' C<' B @B6A 1 =' 9' C<' ?; B @' ' C<' C<;' =1@<' 9

C< C166 DB ' A ' 1?C ' C< D1I BAF 91;<=3 =C E<@ C< EC 6< <P < ' 9 d
G =1 1 A @ ?AI< AG 6< ' ;<A= ' ' C G< CA ' C< . 1?C ' 91?C ' 1 ' ' Czz
. ;; E D<9 ;< C< +;B==1A = EC . ' C< D<61<I<@ ' D] C<6@ '1 ' FC<<> D '
0; BFC = C 1@@ CAI<Q 1 . < 'K 1 '1

C< C1?C ; A@ 9 CA;6<; 1 ;AI<;=1 ? C< 9 ;<= ' 9 CA;6<; 1 @1I1@<@
C< G6A <AB 9 K6 ' A1 S<A ' A @ C< IA66< ' EC1FC =<GA;A <@# C< E '
A; . 1<= ' '61 6< 1 3 C< ;<A;' 9 C< ?61=C A @ A ' C< I<; ' <P ;< . < 9 C<
9 ;<= = @ C< I166A?< 9 A <;6 EC1FC EA= ' ?1I< 1 = A . < ' C<
@1=A= ; B= DA 6< 9 C< . ;; E ' <661 ? ' CA@ I<; ' =>169B66 ' G = <@

BA$<$B+' B3' <M@ +?#$ M B+' <M@ L#>$+A'B3") B+< >$+<&@>+

C1= A; . ' ' C< G6A <AB ' <AFC =1@< 9 C< (;B==<6= ; A@ '
;B= 1 ?' 1 ' C< =G<<@}' A; ;1IA6 9 C< +;B==1A = ' C1= 6<9
C< CA@ F F< ;A <@ C< DB6> 9 C1= 9 ;F<= ' C1= ;1?C ' A @
F< ;< A @ CA@ FFBG1<@ E1 C A' 9<E DA A61 = C< CA <AB @3 B? B .
A @ C< 1A; . = 9 A A < A1 <A @ +AG<6 < EC1FC E<;<1 '9; ' 9C1=
G =1 1 A @ EC1FC D<1 ?' =B;; . @<@ D ' ;FCA;@= A @ E @= 9 ; . <@
<PF<66< ' A B;A6 @<9< F<= ' 1= A;;A ?< . < = CAI1 ?' D<< ' . G6< <@ C<
C<6@ C1 . =<69 ' C< @<9< =1I< EC16= ' AG 6< @;AE1 ?' BG C1= A; . ' A '
C< 9 ' 9 C< C166 G;<GA;<@ ' A AF> C1 . ' H

C< . G<; ;3= G6A ' EA= ' A>< 1 ' C< 91;= ' G6AF< C< A@IA F<@ E ;>=
ELB^@B+!A' L#>+' C; E C1= ;1?C ' E1 ?' A?A1 = ' C< E<A> =1@< 9 C<
B3' ><>?Q ' ?61=C A; . C<1;' 6<9 ' E1 ?' @;1I< 1 ' DAF> BG ' C<1;'
F< ;< A @ ' A>< G ==<==1 ' 9 C< (;B==<6= ; A@ D ' @;1I1 ?' C< (;1 1=C
A; . ' 1 ' C< 9 ;<= ' 9 1? 1<= ' AG 6< ' ;<F> <@ CA ' C< A; ;1IA6 9
0; BFC ' ' C1= ;1?C E1 C A ' 6<A= ' A G ; 1 ' 9 C1= ; G= E B6@ =<FB;<
C< I1F ; ' C1= G6A ' 9 A AF> =A = C< C1= ;1A ' 9 C< =B6A < A @
. G1;< EA= E ; C ' 9 C< ?< 1B= EC1FC F F<1I<@ 1 A @ E 16@ CAI<
D<< ' F; E <@ E1 C =BFF<== 19 C< . G<; ;3= 61<B < A = CA@ B @<;= @
A @ <P<FB <@ C1= ;@<;= ' C< EC 6< ;< FC A; . ' EA= @<G6 <@ 1 ' A
9A =CAG< 1 ' C;<< 61 <= 1 ' 9; ' 9 C< ?61=C A ' C< 9 ' 9 C< C1 ' 9
' A1 S<A ' < ' F . . A @<@ C< 91;= ' 61 < 9 EC1FC <166<3= F ;G=
FFBG1<@ C< 6<9 = BGG ; <@ D ' - <66<; . A 3= FB1;A==1<;= EC16= ' %3 ;6 '
EA= ' C< ;1?C CA I1 ?' D<C1 @ C1 . ' C< . A? 191F< ' @1I1=1 ' 9 C<
FB1;A==1<;= 1 . @<;' 16CAB@ ' DAB3= F ;G= ' C< =<F @ 61 < 9 ; . <@
A ;<=<; I< A ' C< F< ;< ' C< 1 9A ; ' A @ A66 C< FAIA6; ' 9 C< ?BA;@
G = <@ ' <AFC =1@< 9 C< (;B==<6= ; A@ 9 ; . <@ C< C1;@ 61 < EC1FC
EA= 6<==1 ' <P < DB ' @<<G<;' CA ' C< E ' C<;= ' <I< ' C B=A @
;< FC E<;< CB= GG =<@ ' =<I< 91I< C B=A @ ?61=C %B FC A @

. A = ' <661 ? ' CA@' C1=' C<A@ JBA; <;=' A ' A <;6 ' A @' AG 6< ' Y' C<' 9A; . ' 9' A' (<66< 661A F<' EC1FC' F . . A @<@' C<' EC 6<' 9' C<' G =1 1 ' A @' EC< F<' C<' F B6@' F I< 1< 6 ' @11'<F #C<' A AF>

' F . . < F<@' C ' 1 . G< B B=' A==AB6 =' " C<' A@IA F<@' E ;>=" EC1FC F I<;<@' C<' < < . 3=' G =1 1 ' C<' E @' 9' B<, B . ' 5 >< @' B3' ><@70 ' C<' 6<9 ' EA=' 91;=' 9' A66' FA; ;1<@' D ' 0< <;A6' <166<' A @' 6 'SB '1= C' @<=G<;A <' F 911F =' >' G6AF<" A; B @' A' A < A1 <' EC1FC' EA=' . A ' 1 . <=' A>< ' A @' ;< A>< ' EC16=' B ' @3 ;6 3=' 1 9A ; A AF><@' C<' ?61=C' 6<9 ' '9 ; . 1@AD6<' FCA;?<' 9' C<' ?61=C' F FC' A @ ;1=C' @;A? = , C<' F<6<D;A <@' 1 ' (;1?A@< , #G< < ;A <@' C<' =<; ;1<@ . A==<=' 9'1 9A ; ' >' E ' 96A?=' A @' . E<@' @ E ' EC 6<' ;<?1 . < =' E1 C C<1;' =AD;<=' C<' @;A? =' C E<I<;' E<;<' FCA;?<@' 1 ' C<1;' B; " A @ FB ' @ E ' D ' C<' ;< FC' FB1;A==1<;=' A @' 6A F<;=' <A EC16<' < ' H CA@' A><' A' A < A1 <' A @' <PF1 <@' D ' C1=' =BFF<==' CA@' A=><@' 9' C< . G<; ;' ;<1 9 ;F< . < =' ' < AD6<' C1 . ' ' . A><' A' @<F1=1I<' A==A 6 ' ' C< G6A <AB' 1 =<69' 1 ' C<' F< ;<' 9' C<' ?61=C' A; . ' (B ' A6;<A@ ' A ' C B; =1 F<' AG 6< ' CA@' G<;F<1I<@' A' . I1 ?' =CA@ E' ' C<' <@?<' 9' C<' 9 ;<= 9' 1? 1<=' EC1FC' C<' CA@' C G<@' 1 ' IA1 ' ' D<' C<' <A?<;6 '6 ?<@ 9 ; ; G=' 9' A;=CA6' 0; BFC ' C<' 6A <;' 9A A66 ' . 1=6<@' 1 ' C1=' GB;=B1 ' 9 C<' +;B==1A =' CA@' = B?C ' C< . ' ' C<' ;1?C ' 1 ' C<' @1;<F 1 ' 9' AI;<' EC16=' C< ' E<;<' . A;FC1 ?' ' C<' 6<9 ' 'K 1 ' C<' ?61=C' A ' ' A1 S<A ' ' C<' . <A 1 . <' C<' = . D;<' . A==' AGG; AFC<@' I . 1 1 ?' 91;<' BG C<' ;< FC' ; G=' A @' B; <@' B ' ' D<' A' G ; 1 ' 9' C<' +;B==1A ' A; . ' C<' F ;G=' B @<;' (B6 E ' AG 6< ' 1 = <A@' 9' <' A; . ' CA@' E' E ' F . DA ' A @' D<9 ;<' Cd' F 16@' A==1=' < ' ' C1=' 6<9 ' 1 ' EA=' <F<==A; ' CA C<' =C B6@' F I<;' A @' 9 ; 19 ' C1=' ;1?C ' DAB3=' F ;G=' EC1FC' EA=' I<; 1 9<;1 ;' 1 ' B . D<;=' EA=' ;@<;<@' ' FC<F>' C<' A@IA F<' 9' C<' +;B==1A = C<' . G<; ;' C E<I<;' ?;A <@' ' < ' C<' <1?C ' ;<?1 . < =' 9' 16CAB@3= FB1;A==1<;=' A6 C B?C' A ' C<' =A . <' 1 . <' C<' ;@<;<@' C1 . ' ' AEA1 ' C1=' E ' Y @1;<F 1F . =' D<9 ;<' ;1=6F1 ?' A ' A AF>' C<=<' 91 <' ;<?1 . < =' A@IA F<@' FFBG ' C<' <E' G =1 1 ' EC1FC' CA@' D<< ' A==1? <@' ' C< . ' D< E<< ' C< F ;G=' 9' <166<' A @' @3 ;6D ' A @' @;<E' A6 ?' E1 C' C< . ' 1 ' F =<JB< F< 9' A ' B 9 ; B A <' <;; ;' C<' EC 6<' 9' C<' FAIA6; ' 9' C<' ?BA;@' < ' G<;F<1I1 ?' C1=' < ; . B=' A @' =G6< @1@' . A==' 9' FAIA6; ' A ' C1=' @1=G =A6' A @' =<<1 ?' =1P ' G1<F<=' 9' ?61=C' A; 166<; ' 166' G; <F <@' D<9 ;<' C1 . ' A 1F1GA <@' C<' . G<; ;3=' ;@<;=' >' C<' FA ' 9<66' 61><' A' < . G<= ' . A ' =JBA;<=' 9' ?61=C' 1 9A 13 ' A @' @<= ; <@' C< . ' C< ' A>1 ?

8*ʻ - ! ! ' = 0 ' !' 0 ' : >' $ ' 8 * - '

D@1FA 1 ⁄ DB ' <I<; C<6<=='ʻ AI 1@<@ʻ @<F6A;1 ?ʻ C< . =<6I<='ʻ 1 ' A ' AD= 0 6B <ʻ . A <;'ʻ 9 ;ʻ AG 6< ' ⁄ A @ʻ 9 ; . <@ʻ Aʻ 0 I<; . < ' F . G =<@ʻ 9ʻ Cʻ 1 1= <;='ʻ A; 'A @ʻ BFCW⁄ %B><ʻ 9ʻ ;A ⁄ 0< <;A6='ʻ AB6A1 F B; ' A @ʻ 0;] 1<;⁄ A @ʻ Cʻ 6@ʻ I< 1 A61= ' LB1 < <' BFCW⁄ EC ' CA@ʻ D< ;A <@ʻ Cʻ . G<; ;⁄ EA='ʻ AGG 1 <@ʻ +;<=1@< ' 9ʻ C1='ʻ +; I1=1 A6ʻ 0 I<; . <

AG 6< ' JB1 <@ʻ +A;1=⁄ A @ʻ 9; .' A6 . A1= ⁄ ' EC1FCʻ Cʻ ;< 1;<@⁄ Cʻ B; <@ʻ C1='ʻ < <='ʻ EA;@='ʻ . <;1FA ' (<C1 @ʻ C1 . '1 B . <;AD6ʻ< < . 1<='ʻ G;<0 F1G1 A <@ʻ C< . =<6I<='ʻ BG ' +;A F<Nʻ Cʻ ; A@='ʻ ' +A;1='ʻ E<;ʻ G< ⁄ A @ʻ Cʻ ?61=Cʻ A @ʻ +;B==1A ='ʻ < <;<@ʻ C< . ⁄ 6<AI1 ?ʻ Aʻ @A ?<; B='ʻ 1 <; IA6ʻ D< E<< ' C<1;'F 6B . =' AG 6< '9 66 E<@ʻ ' Cʻ . AGʻ C<1;'ʻ ;A=Cʻ F B;=<' <'> <Eʻ CA ' 0; BFC 3='ʻ F ;G=⁄ ECIFCʻ CA@ʻ 6 = '1 =<69ʻ 1 ' GB;=B1 ' 9ʻ Cʻ +;B==1A =' ' Cʻ FFA=1 ' 9ʻ Cʻ DA 6< 9ʻ A <;6 ⁄ CA@ʻ ;< . A1 <@ʻ 1 AF ⁄ CA ' 1 ' CA@ʻ ;< B; <@⁄ A @ʻ CA ' 1 ' Aʻ 9<Eʻ @A ='ʻ Aʻ C1 . @;<@ʻ A @ʻ =1P ' C B=A @ʻ . < ' . 1?C ' D<ʻ A==< . D6<@ʻ B @<;'ʻ C1='ʻ F . . A @⁄ A @ʻ FB ' 99ʻ Cʻ < < . 3='ʻ ;< ;<A ' 1='ʻ EA;11><ʻ ?< 1B='ʻ EA='ʻ F< . ;ʻ A; B=<@ʻ Ñ Cʻ E; <ʻ ' Cʻ +; I1=1 A6ʻ 0 < . . < ' CA ' Cʻ CA@ʻ F F<1I<@ʻ A ' 1 9A661D6ʻ< G6A ' 9 ;ʻ Cʻ @<9<A ' A @ A 1C16A 1 ' 9ʻ Cʻ < < . ⁄ A @ʻ A=><@ʻ ' Dʻ< A66 E<@ʻ '91?C ' C< . ' A='ʻ Aʻ =1 . G6ʻ< ?< <;A6ʻ 6 ' C1='ʻ 99<;⁄ C E<I<;⁄ EA='ʻ ;<K<F <@⁄ A @ʻ Cʻ< . G<; ;ʻ ;<=1? 1 ?ʻ C1 . =<69ʻ ' Cʻ <F<==1 ' 9ʻ JB1 1 ?ʻ ;A F<⁄ G; F<<@<@ʻ EA;@='ʻ FC<9 ; ⁄ B @<;'ʻ Cʻ G; <F 1 ' 9ʻ 0< <;A6ʻ (<F><;' (B ' Cʻ< ?61=Cʻ F;B1=<;='ʻ D6 F>A@<@ʻ Cʻ< G ; ⁄ A @ʻ C<;ʻ AGG<A;<@ʻ ' FCA Fʻ< CA ' AG 6< ' I B6@ʻ Dʻ< AD6ʻ< ' <=FAG<ʻ C< . ' @ʻ E⁄ ?1I1 ?ʻ EA ' ' Aʻ = ;A ?ʻ< 6B0 =1 ⁄ Cʻ< 96A <;<@ʻ C1 . =<69ʻ CA ' Aʻ D6ʻ< F 91@< Fʻ< ' C1='ʻ GA; ' E B6@ʻ ;1B . GCʻ VI<;'ʻ G 61 1FA6ʻ <P1?< F1<=⁄ A @ʻ Cʻ< E; <ʻ ' Cʻ +;1 Fʻ< <?< ' ' @< . A @ʻ 9ʻ C1 . ' Gʻ Dʻ< A66 E<@ʻ ' =1 ⁄ 61><ʻ A C<;'ʻ C< . 1= F6<=⁄ A ' Cʻ< C<A; Cʻ 9ʻ Cʻ< (;1 1=C" G< G6<⁄ B @<;'ʻ Cʻ< G; <F 1 ' 9ʻ C<1;'ʻ 6AE='ʻ Ñ A @ʻ C< ' < . DA;><@ʻ E1 Cʻ C1='ʻ =B1 <ʻ ' D A;@ʻ Cʻ< ?61=Cʻ I<==<6⁄ Cʻ<

F#$<@7A'<B'<M@' 1 # ! 1='ʻ 6< <;'ʻ EA='ʻ 6<9 ' B A =E<;<@'ʻ Ñ DB ' ;@<;= F' I<' <@ ' @' ` ' <;< =< ' ' F @BF ' Cʻ< 166B= ;1 B='ʻ =BGG61A ' ' A1 ' <6< A⁄ A @ʻ Cʻ< EA='ʻ A6 . = ' 1 . . <@1A <6 ' F I< <@⁄ 9 ;ʻ Cʻ ;<G =<ʻ 9ʻ Cʻ< E ;6@⁄ ' Cʻ< ; F>' EC1FCʻ EA='ʻ ' Dʻ< C1='ʻ G;1= ' A @ʻ C1='ʻ . D ' @ʻ CB='ʻ @1=AGG<A;<@ʻ C1='ʻ E @<;9B6ʻ . A ⁄ 9 ;ʻ ' Cʻ< 6A= ' 1 . <⁄ 9; .' Cʻ< 61 61 1FA6ʻ = A?<ʻ Ñ 6<AI1 ?ʻ D<C1 @ʻ C1 . ' Aʻ ?;<A ' I 1@⁄ 1 ' EC1FCʻ = ' F6A=C<@ʻ ?< C<;'ʻ IA;1 B='ʻ A @ʻ 1; ;<F F16AD6ʻ< 1 <;<= =⁄ Cʻ< =C F>' 9ʻ EC1FCʻ EA='ʻ 6 ?ʻ G; @BF 1I<ʻ 9ʻ Aʻ 9;1?C 9B6ʻ B; . 16⁄ <I< ' Aʻ=' Cʻ< =1 >1 ?ʻ 9ʻ Aʻ ?;<A ' I<==<6ʻ FAB=<='ʻ Cʻ< EA <;='ʻ ' =B;?<ʻ 9; .' C<1;'ʻ I<; ' @<G C=

+ '

)' ' ' ' ' ' ' ' ' ' " ' '
' ' ' ' ' ' ') ' -

h '8 0!' 7 , UG #' @ !' "' Y

*+' 661<=' >' =<F @' 1 . <' G< <@' ;A F<' ' C<' (B;D =' B1=' : . (' 1 ' A' G; F6A . A 1 ' 9' C<' C' 9' SB <(' @A <@' G#1Ag(A 1 ' 9' 9; .' A . D;A1(' =A1@(' [' ' F . <' A' =<F @' 1 . <' ' ;<FA66' . ' P I 111 ' . 1=6<@' =BDK<F =' ' C<1;' @B (' ' A==BA?<' C<' <I 16=' EC1 C' ' F B6@' CAI<' E1=C<@' ' G;<I< (' A @' ' G6AF<' . =<69' A' =<F @' 1 . <' D< E<< ' C<' A661<@' A; . 1<=' A @' C<' ;< FC(' 1 ' C<' C G<' CA ' C<' ;<?A;@' EC1FC' ' D<61<I<' ' D<' 9<6 ' 9 ;' . <' . A ' B; ' ' C<1;' G; 91 ' (' EC ' CAI<' <I<;' G; . 1=<@' 9A6=<6 (' G; . 1=<' ' 9 ;?1I<' . ' . 1=6<@' =BDK<F =' A66' CA ' CA=' A>< 3G6AF<" =1 F<' C<' @A ' EC< ' z' JB1 <@' 166<(' 1 ' C<' . 1@=' 9' = ' . A ' <A;=(' ' C<' @A ' EC< ' ' ;< < <;<@' A . D;A1' 1 ' C<' . 1@=' 9' = ' . A ' AFF6A . A 1 =' (B ' C<' D6 @' 9' . ' FC16@;< ' CA=' D<< ' . A@<' 96 E' D ' . <A =' 9' A' ;<A= ' =BFC' A=' C<' E ;6@' CA=' <I<;' < ' E1 <==<@(' A @' C<' AB C ;=' 9' C1=' C ; ;1D6<' G6 ' E166' D<' G 1 <@' B ' ' C<' CA . D<;=' A=' 91 ' DK<F =' 9 ;' C<' I< ?<A F<' 9' C<' 6AE `

B1=' : 1 (' C E<I<;(' CA@' ' < ' D<< ' G; F6A1 . <@' 1 ' C<' FAG1 A6 ' C<' ;< FC' A; . (' F =1= 1 ?' 9' A' CB @;<@' A @' E< ' C B=A @' . < ' A @' 91I<' CB @;<@' G1<F<=' 9' FA (' < FA . G<@' B @<;' C<' EA66=' 9' +A;1=(' A @' C<' CA . D<;' 9' <G;<=< A 1I<=' F 1 B<@(' A . 1@=' C<' F6A . B;' 9' A; . =(' ' @1=FB=' AD= ;AF ' F = 1 B 1 A6' 61< ;1<=(' A @' ' <= AD61=C' ?BA;A <<=' 9 ;' C<' 9;<<@ .' 9' C<' A 1 ' C<' ?C=C' A @' C<' +;B==1A =' CA@(' A=' E<' CAI<' =<< (' ;A=C6 ' A@IA F<@(' 6<AI1 ?' D<C1 @' C< .' A' ;1G6<' 61 <' 9' 9 ;0 ;<==<=(' A @' C<' I1F ; ' . 1?C '= 1 'CAI<' D<< '@1=GB <@' 166<@' E1 C' C<' 1@<A# C E<I<;(' 9' @1<' C ; ;1D6<' 9A <' ' EC1FC' A' 9;<=C' ;<I<;=<' . 1?C ' =BDK<F ' C<' FAG1 A6' 9' ;A F<(' C<' CA . D<;=' A @' C<' C<A@' 9' C<' 0 I<;B . < 'KB@?<@

8 - " >' ' ' - ' : !>' $' 8* -'

1' . ;'< G;B@< ' ' <? 1A'< CA ' ' 91?C'(A @' ' C'< 8;@' 9' SB6 'A'
FAG1 B6A 1 ' ;' . 161 A; ' F I< 1 ' EA='=1? <@' A ' A1
B$ C@7'B3'
>7$A' 'D#K'2' 6 B@' ' C;<<' F . . 1==1 <;=(' .' C'< A . '< 9' C'< +; I1
=1 A6' 0 I<; . < (' A @' D ' <661 ? ' A @' (6BFC<;(' C'<
?< <;A6='1 ' F . . A @' 9' C'< ?61=C' A @' +;B==1A ' 9 ;F<=' (' C1='F 0
I< 1 '1' EA='A?;<<@'[' CA ' C'< ;< FC' . ' =C B6@'<IAFBA '< +A;1=(' A @'
;< 1;'< D<C1 @' C'< 1;<(' CA ' G;1IA '< G; G<; ' =C B6@'D'< ;<=G<F <@(' A @'
GBD61F' G; G<; ' A6= (' E1 C' C'< <PF<G 1 ' 9' =BFC' A='EA='F 1 . <F <@' E1 C'
EA;(' A @' C'< 1 CAD1 A =' 9' C'< F1 ' A ' C'< 1 . '< 9' 1 ='FAG1 B6A 1 ' =C B6@'
D'< 1 ' ' EA ' @1= B;D<@' ;' A <@' 1 ';<=G<F ' ' C<1;' A99A1;=(' C<1;'F / '
@BF (' ;' C<1;'G 61 1FA6' G1 1 = `
' C'< C' SB6 ' C'< - 1 ?' F'< . ;'< < <;<@#'+A;1=' A66< ;A @' EA='
. A@'< G;<=1@< ' 9' C'< <E' . 1 1= ; (' A @' C'< ;<?1F1@'< BFCW(' EC (' D '
D< ;A 1 ?' AG 6< (' CA@' ?;<A 6 ' F @BF<@' ' C'< ;< B; ' 9' B1='; (' EA='
;<EA;@<@' D ' A' G6AF'< 1 ' C'< B F16' A @' C'< G ; 9 61 ' 9' G 61F<'
$A<A'B3 E ' 61= =' 9' G; =F;1D<@' G<;= =' E<;'< 1 . . <@1A <6 ' @;AE '
G; = ;1G 1 A(G' GBD61=C<@'1 ' A' F<6<D;A <@' @<F;<<' @A <@' C'< C' 9'
SB6 ' (' <' 9' C< . ' =<I< << ' ?< <;A6='A @' 991F<;=' E<;'< =B . . <@'
D<9 ;'< A' . 161 A; ' ;1DB A6'N EC16=' C'< C<;' F A1 <@' C'< A . <=' 9' C1; '
1 '< G<;= =' EC ' E<;'< ' D<' B @<;' C'< =B;I<166A F<' 9' C'< G 61F<' 61 16'
C'< CA . D<;='=C B6@' CAI<' F . '< ' A' @<F1=1 ';<=G<F 1 ?' C< . ' A; '
EA='A . ?=' C< . (' A @' BFCW(' C1='F 66<A?B<' 1 ' C'< . 1 1= ; ' 9' C'<
B @;<@' %A =(' =1? <@' C'< 61= =' 9' G; =F;1G 1
C'< A661<@' ; G='CA@' < <;<@' C'< FAG1 A6' D<9 ;'< C'< - 1 ?(' A @' C<1;'
A A; I' D<A;1 A' AI'< ;<A= ' ' D<61<I'< CA ' C< ' 1 . A?1 <@
#61<@'<7BBLA'<B' CA (' C1='1 . <(' C< 'CA@' < <;<@' 1 ' 6<==' D ' I1; B'< 9' A'
;<A ' CA ' D ' ;1?C ' 9' F JB<= (' A @' 9; .' ' C'< 91;=' @A '
<I<; ' <'F B6@'B @<;= A @' C E' ?;<A ' E<;'< C'< <I16='EC1FC' C1='=<F @'
1 IA=1 'CA@'@;AE ' BG ' ;A F<' C'< +;B==1A =(' <=G<F1A66 (' ;<?A;@<@'
E1 C' 9<; F1 B='6 >='C'< . B . < =' EC1FC' E<;'< C'< ; GC1<=' 9' C'<
;< FC' I1F ;1<=(' A @' 1 ' ;<JB1;<@' A' D6'< ;<=1= A F'< ' C'< GA; ' 9' B1='
: ' ' G;<=<; I'< C'< D;1@?'< 9' S< A' 9; .' C<1;' D;B A6' I1 6< F<' 0
=B6 1 ?' A ' F'< C'< GBD61F' . B; 1 ?' A @' D;AI1 ?' 1 =' ;<=< . < (' A '
1 = 6< ' ;@<;' 9' C'< @A ' 1==B<@' D ' 0< <;A6' B9961 ?(' C'< ? I<; ;' 9'
+A;1=(' @1;<F <@' C'< =< 1 <6='91;'< BG ' A ' EC ' =C B6@' 99< @' C< . ' D '
E ;@(' ?<= B;<(' ;'6 >' ' %< AM<=(' G;<9<F ' 9' G 61F<(' CA@' C1='DA;DA; B=

;@<;' . ' @ E (A @' C1=' AF ' 9' F B;A?<' D<FA . <' C<' = B;F<' 9' C1=' C1?C' <6<IA 1 ' ' =G1 <' 9' C<' FAG1 B6A 1 ' C<' . B=<B . =' E<;<' GlB ?< 9 C<' G166A?<@N <I<; ' A <(<I<; ' F1 ' 1 ' B;yJh' @< . A @<@' C<' ;<= ;A 1 ' 9' C<' G1F B;<=' A @' = A B<=' 9' EC1FC' C< ' CA@' D<< ' @<=G 16<@(A @' +A;1=' D<C<6@' E1 C' = BG<9AF 1 ' C<' E ;>=' 9' A; ' EC1FC' CA@' D<< ' GA1@' 9 ;' D ' ;< FC' D6 @' =<1M<@' A @' FA; ;1<@' 99

C<' A; . ' 9' C<' 1;<' D<1 ?' A ' C1=' 1 . <' A' = B;F<' 9' F 1 BA6' <;; ;' ' C<' 1 IA@<;=(C<' 6A <;' @< . A @<@' 1 =' @1=DA @ . < ' 6 E<;<@' 1 =' <A?6<=' A @' 6A1@' @ E '1 =' A; . =' A ' C<' ;@<;' & 9' 6 , 7 , , : B$7@ A;=CA6' AF@ A6@(A @' ' @1= ;@<;=' AFF . GA 1<@' 1 =' ;<0 B; ' ' 1 =' C<A; C=' ' 0 BI1 ' A1 ;(C<' 1 1= <;' 9 ;' A;(C< ' G6A <@' C<' F;<A 1 ' 9' A' <E' A; . (A @' 1 ' EA=' A ' C1=' G<;1 @' CA ' >' G6AF<' C<' ;?A 1MA 1 ' 9' C<' A6' 0BA;@

C<' F . G =1 1 ' 9' C<' CA . D<;=' B @<; E< ' 1 . G ; A ' . @191FA 1 = C<' G<<;A?<(EC1FC' 1 ' ' ' EA=' C<;<@1 A; ' ;' 9 .;' 619<(& @S'?B ; LBA$<$B+ 6 ' 0' AFF ;@1 ?' ' C<' E166' 9' C<' . A;FC(EA=' ;< @<;<@(1 ' B ' ?B= (7(< 1;<6 ' C<;<@1 A; ' A ' G<<;=' 9' C<' 91;=' h ;<= ;A 1 ' EC ' CA@' =A ' @B;1 ?' C<' B @;<@' %A =' E<;<' @<G;1I<@' 9' C<1;' G =1 1 =(A @' C<' - 1 ?' . 1 A <@' 1 < E ' <E' <=' ' @<F;<<' @A <@' C<' 8 C' 9' SB6 ' =BD . 1 <@' . A ' A; 1F6<=' 9' C<' FCA; <;' ' C<' ;<I1=1 ' 9' C<' 6<?1=6A 1I<' G E<;(A @" F I ><@' C<' <6<F ;=' ' C<' 9 66 1I1 ?' C' 9' B?B= ' 9 ;' C<' GB;G =<' 9' <6<F 1 ?' A' <E' CA . D<;' 9' %<GB 1<=' C<' <6<F 1 =' E<;<' ' D<' . A@<' 1 ' E ' = A?<=(D ' A A6' 66<?<=' A @' %<0 GA; . < A6' 66<?<=' C<' 6@' <6<F ;A6' 61= =' E<;<' 9166<@' BG' A ' C<' E166' 9' C<' G;<9<F =N A' ?;<A ' B . D<;' 9' 6@' - 1?C =' 9' A1 ' B1=' B1 ;= IA1I=' E<;<' A;D1 ;A;16 ' AGG 1 <@' <6<F ;=(A @' ;A = . 1 <@' ' C<' <1< = f1=B ' <E' CA . D<;' C<' I1 6< ' ;<AF 1 A1 ' =G1;1 ' D ' EC1FC' C< ' E<;<' C< . 0 =<6I<=' A 1 . A <@' = ' 9' C<' <6<F <@' . < . D<;=' D<6 ?<@N 1 ' 9AF (' 61<' F6A=='FA66<@' 6 ;A A61= (A @' K 1 <@' C<' CA . D<;' ' 6 ' E1 C' 1@<A=' . = ' C = 16<' ' C<' <I 6B 1 (DB ' A6= ' E1 C' A' @<=1;<' 9 ;' I< ?<A F<(>+C' E1 C' C<' F 91@< F<(' 9 < ' ;A=C(1 =G1;<@' D ' I1F ; ' A9 <;' A' F;B<6' @<9<A

' EA=' E' CA ' D<FA . <' . A 19<=' C<' 1 <P ;1FAD6<' @1991FB6 1<=' 1 ' EC1FC' C<' 0 I<; . < ' 9' C<' <= ;A 1 ' EA=' 1 I 6I<@' C16=' D6A . 1 ?' C<' ;<AF 1 A; ' CA . D<;' 9' 7(E<' . B=' ' F 9 B @' E1 C' C<' . A==' 9' GA==1 A <' . < ' EC ' 9 ; . <@' 1 =' . AK ;1 ' C<' =BG<;1 ;' . 1 @=' EC1FC' <

, , . & , T : S - ; '

A= = ' A= G ; <=< <@ ' < 9 C<=< =B=G< @<@ 1 @1 1@BA6 61D<; A C<;
G1 . 1=C<@ =<@1 1 B= F ; 1<= E1 C ; A =G ; A 1 A @ A C1 ; @ =BD0
K<F <@ G<;1 @1FA6 GBD61FA 1 = ' C< F< = ; =C1GM + ; I = A6 AF1 %A1 '
B ; = E<;< <= AD61=C<@ 9 ; . ' EC1FC C<;< EA= ' AGG<A6 M FCA F ;' 9
A @ 91 A66 ' C< @1=FB==1 ' 9 A 6AE ' 9 A . <= <==1<B ;=
A (B ; @ A < A @ %BG6<==1= 0 ; W <@1 ' G ; G =<@ ' 9 ; . ' IA ; 1 B= FA <0
? ; 1<= 9 F ; 1 . 1 A6= EC1FC . 1?C ' D< A ; D1 ; A ; 16 ' . A@< ' 1 F6B@< . A '
C B=A @= 9 ; < FC . < ' C< F . . 1 << @1 ; <F <@ ' . A>< A ; <G ; '
; <=G<F 1 ? C1= 6AE =A F 1 <@ C< ' G6A ' 9 FA <? ; 1<= A= E<66 A= CA ' D '
EC1FC 1 ' EA= G ; G =<@ CA ' C< EA ; F ; 1DB 1 ' 1 . G =<@ D ' C< A661<=
=C B6@ D< @<9 ; A <@ D ' F 91=FA 1 = ' ' G ; G =<@ . ; < I<; C ; B?C 1 =
=G<A><; ' @< ; D1] ; <= CA ' C< ; <?1F1@<= =C B6@ D< <PF6B@<@ 9 ; . ' C<
A . <= ' C< E ' 91; = ' G ; K<F = E<; < ; <K<F <@ D ' I<; ' = . A66 . AK ; 1 1<=
DB ' C< CA . D<; A@ G <@ C< 6A= 91 @ F @< . <@ ' G<; G< BA6 DA 1=C0
. < ' C< ; <?1F1@<= EC ' CA@ =1? <@ C< [F < @@1 1 <6 ` ; ' EC ' CA@
D<< ' < . G6 <@ D ' C< 0 I<; . < ' 9 C< B @ ; <@ %A = ' C1= . <A=B ; <
BFC<@ BFCW C1 . =<69 INC ' EA= C< ' C< ; < FC . DA==A@ ; ' A ' %; <=@< 3
A @ EC ' @1<@ 1 ' <P16<
(6 @ ' <P<FB 1 = G ; <F<@<@ C< GA==1 ? 9 C1= I < 9 A . <= ' C<
B ? A (W@V] ; < EA= C< 91; = ' I1F 1 . M A @ A9 <; ' C1 . ' < C<
C< D ; AI<= ' 9 C< D ; AI W 1 I ><@ 1 ' IA1 ' D<9 ; < C< CA . D<; '
9 +<<; = C< D< <91 ' 9 C< FAG1 B6A 1 ' 9 A1 6 B@ M C<
EA= F @< . <@ p @<A C A @ <P<FB <@
AIA6< <% 1 ; <F ; 0< <; A6 9 C< + = =@B ; 1 ? C< B @ ; <@ %A = 6 '
<=FAG<@ FAG1 A6 GB 1=C . < ' C ; B?C C< @<I 1 ' 9 C1= =< 9
E19< A @ C< A1@ 9 C ; << ?< <; B= ?61=C . < ' R EC '
9AI B ; <@ C1= <=FAG<' C< ' C< CA . D<; 9 %<GB 1<= 6<A ; <@ CA ' C<
CA@ <6B@<@ 1 = ?; A=G 1 ' DB ; = ' B ' 1 ' . < AF<= A?A1 = ' C< . 1 1= <; =
EC . ' 1 ' C<6@ ; <=G =1D6< 9 ; ' C< <I<
' C< F B ; =< 9 C< <A ; ' *' . A ' G<; = = E G CA@ D<< ' . < 1 <@
1 ' C< @<F ; << 9 C< C 9 SB6 ' E<; < A ; ; <= <@ A @ ; 1<@ ' B . <; A= '
C< D ; C<; = ABFC<; 9 A - W 6<C D C ?< <; A6=C 1 =<GA '
; AD1< 1 ' @<A C A= 1 ' 619<C ' E<; < =C ' A ' (; @<ABP M 0< <; A6=
B %B I<; < ' A @ CA ; ; A @ '=B99<; <@ C< =A . < GB . =C 1< M A @
0< <; A6 (A1; <C = 166 . ; < B 9 ; B A <C CA@ ' D<A; ' A ?; == @<?; A@A0
1 ' . < C<; =C <9<DI ; w %<= B< <C C< E ' D ; C<; = A66< . A @C
1?AB@ A @ AIA ; C E<; < F @< . <@ ' @<A C " ' - - ' D B ' C<

, , . 0 , T ' + '

G1<F<ﾀ . A@<ﾀ1 . G ; A ' . @191FA 1 =ﾀ1 ' C1=ﾀG6A 'G; G =<@ﾀD ' C<ﾀ O I<; 0 . < ﾀA @ﾀ=BDK<F ' ' C<=<ﾀ . @191FA 1 =ﾀ C<ﾀ CA . D<;ﾀ A@ G <@ﾀ 1 'ﾀ DB ' C<ﾀ CA . D<;ﾀ 9ﾀ+<<;=ﾀ;<K<F <@ﾀ1 ﾀA @ﾀ C<ﾀ<6<F ;Aﾀ6AEﾀEA=ﾀ C<;<9 ;<ﾀ6 = ' C<ﾀ;<AF 1 A; ' < @< F1<=ﾀ 9ﾀ C<ﾀ . AK ;1 ' <Aﾀ7@R@?<$B+
;<AGG<A;<@ﾀ1 ' C<ﾀ@1=FB==1 ' ' C<ﾀDB@?<

C<ﾀ<6<F 1I<ﾀFCA . D<;ﾀ1 '=G1 <ﾀ 9ﾀAﾀ 9 ; . #ﾀ < ?A?< . < ' < <;<@ﾀ 1 ' D ' C<ﾀ - 1 ?ﾀ1 ' C<ﾀG;<I1 B=ﾀ <A;ﾀ@<G;1I<@ﾀ C<ﾀ A<ﾀF;<@1 ;=ﾀ 9ﾀ C<ﾀD<= ' ?BA;A <<ﾀ 9 ;ﾀ C<ﾀ GA . < ' 9ﾀ C<1;ﾀ@<D =ﾀ D '@<F6A;1 ?ﾀ CA ' C<ﾀ A<ﾀ 9 ;<= =ﾀ=C B6@ﾀ 'D<ﾀA61< A <@ﾀA @ﾀ CA ' C<ﾀ FCB; Cﾀ =C B6@ﾀ ;<F I<;ﾀ G =0 =<==1 ' 9ﾀ C<ﾀG; G<; ' ' < ' = 6@ﾀ EC1FCﾀ CA@ﾀD<6 ?<@ﾀ ' C<ﾀ 6@ﾀF6<;? ' 9ﾀ ;A F<

'=<;1<=ﾀ 9ﾀ . <A=B;<=ﾀ 1 ?<@ﾀE1 Cﾀ C<ﾀ =A . <ﾀ =G1;1 ' EA=ﾀ I <@ﾀ ;ﾀG; 0 G =<@ﾀD ' C<ﾀ . AK ;1 ' C<ﾀ 6AEﾀ 9ﾀ@1I ;F<ﾀEA=ﾀ AD 61=C<@ﾀ C<ﾀ F6<;? ' E<;<ﾀAB C ;1M<@ﾀ ' AFF<G ' <I<; ' =G<F1<=ﾀ 9ﾀ?19 'ﾀ A @ﾀ91 A66 ﾀ1 ' EA=ﾀG; 0 G =<@ﾀ 'G6AF<ﾀ C<ﾀB 1I<;=1 '1 . @<;ﾀ C<ﾀ =BG<;1 < @< F<ﾀ 9ﾀ C<ﾀD1=61 G=ﾀ A @ﾀ 'D<= Eﾀ C<ﾀF1I16ﾀ;<?1= ;A;=C1G=ﾀBG ' C<ﾀGA;1=Cﾀ G;1<= =

C<ﾀG;B@< ' ;<=1= A F<ﾀECIFCﾀ C<ﾀ - 1 ?ﾀ GG =<@ﾀ ' C<ﾀCA= 1 <==ﾀ 9ﾀ C<ﾀ <6<F 1I<ﾀFCA . D<;ﾀEA=ﾀ @1 B=ﾀ ' C<ﾀ . < . D<;=ﾀ 9ﾀ C<ﾀ . AK ;1 ' B1=ﾀEA=ﾀ =B=G<F <@ﾀD ' C< . 'ﾀ C< ' G< 6 'AFFB=<@ﾀC1 . ' 9ﾀ;<I 6B 1 A; ' < @< F1<=ﾀﾀ D A= <@ﾀ CA ' C< 'E<;<ﾀ . ;<ﾀ; A61= ' CA 'C1 . =<69ﾀA @ﾀ6<A?B<@ﾀ C< . =<6I<=ﾀ E1 Cﾀ C<ﾀ . < . D<;=ﾀ 9ﾀC1=ﾀ E ' 9A . 16 '9 ;ﾀ C<ﾀ GB;G =<ﾀ 9ﾀ GG =1 ?ﾀ A @ﾀ 9;B= ;A 1 ?ﾀC1=ﾀE1=C<=' 'EA=ﾀ C1=ﾀFCA . D<;ﾀECIFCﾀ 91;=' AGG<A6<@ﾀ ' C<ﾀ <PA . G6<ﾀ 9ﾀ ?6A @ﾀEC< ' F6A1 . 1 ?ﾀ Aﾀ =G<F1<=ﾀ 9ﾀ . 1G < F<ﾀ 9 ;ﾀ C<ﾀ 6<?1=6A 1I<ﾀ G E<;ﾀA @ﾀA < . G 1 ?ﾀ ';<@BF<ﾀ C<ﾀ . A;FCﾀ 'Aﾀ G =1 1 ' IC1FCﾀEA=ﾀA9 <;EA;@=ﾀ @<=F;1D<@ﾀ 1 ' C<ﾀ F<6<D;A <@ﾀ . AP1 . , [' C<ﾀ - 1 ?ﾀ ;<1? =ﾀDB '@ <=ﾀ '? I<; `

C<ﾀ - 1 ?ﾀ CA@ﾀ A 1 . F<@ﾀ' ' C1=ﾀ ;< B; ' 9; .' OC< ﾀ CA ' C1; << ' A; 1F6<=ﾀ 9ﾀ C<ﾀFCA; <;' E B6@ﾀD<ﾀ=BD . 1 <@ﾀ9 ;ﾀ ;<I1=1 ﾀA @ﾀ1 ' EA=ﾀ<I1@< ' CA ' C<ﾀFCA . D<;ﾀ1 < @<@ﾀ ' . A><ﾀ C1=ﾀAﾀ G;< <P ' 9 ;ﾀ A 1C16A 1 ?ﾀ C<ﾀ FCA; <;ﾀA6 ?< C<; ' C<ﾀ B '@3 ; 1=ﾀA @ﾀ C1=ﾀ 9;1< @=ﾀ 9ﾀ $[3#B@+?@'B3<MB' C<ﾀ +AI161 ' A;=A ﾀEC ' AFFB=<@ﾀ C<ﾀ - 1 ?3=ﾀ ? I<; . < ' <9 9 1<';]# 9ﾀD<1 ?ﾀ ' 1D<;Aﾀ6 1 ' ﾀA @ﾀEC '1 . GB <@ﾀ ' C1=ﾀFAB=<
C<ﾀFA A= ; GC<ﾀ 9ﾀ C<ﾀ B @;<@ﾀ%A =ﾀ=CAG<@ﾀ C<ﾀF B;=<ﾀGB;=B<@ﾀ D ' C<ﾀ CA . D<;' 1 ' 7 ' C<ﾀ +;1 F<ﾀA6;<A@ ' <P<;F1=<@ﾀ Aﾀ ?;<Aﾀ 1 96B< F<ﾀ D ' . <A =ﾀ 9ﾀAﾀ= F1< 'ECIFCﾀEA=ﾀA ' C<ﾀ=A . <ﾀ 1 . <ﾀG 61 1FAﾀ6 A @ﾀ;<61?1 B=ﾀ C<ﾀ ;A . 191FA 1 =ﾀ 9ﾀECIFCﾀ <P < @<@ﾀ 9; .' C<ﾀ F B;' ' C<ﾀ @<G Cﾀ 9ﾀ C<ﾀ G; I1 F<=' ' C1=ﾀ 91;=' A @ﾀ =>169Bﾀ ;?A 1MA 1 ' C<ﾀ A@@<@ﾀ C<ﾀ ' 6<==

/ /

G E<;9B6 {< 9 C< A 1 A6 0BA;@ A66 C< 1 =G<F ;= 'A @ A66 C< 991F<;= 9 EC1FC 1 . . < =< D @ E<;< =<6<F <@ D C1 . =<69 9; . A . ?= C< <P ;< . < ; A61= = ;A F< E 9 B @ C<;=<69 GB;=B1 ? A F . ;=< F 0 ;A; C<;<E 1 = 1 B 1 =A @ C< ;<G;<=< A 1I< . A;FC EA= 1 =<69 1 G<;16

1= < 1 ?A C<;<9 ;<A C< =B??<= 1 = 9 C1= E ;<A= A @ C< <A; <= A@I1F< 9 CW . 1 1= <;=A 1FC<61<BA %<FAM<=# A @ A1 <A B1= @@7@@ 9 @L0 : 1==B<@ C< 9A . B= @<F;<< 9 C< 7 C <G < . D<;A <B ; J@7 *& + @1=#D6I<@ C< CA . D<;' 9 %<GB 1<=A 91P<@A AFF ;@1 ? C< <P 9 C< = 1 B 1 A C< B . D<;' 9 @<GB 1<= A E CB @;<@ A @ =1P A A @ @<F6A;<@ CA A; 1F6< 9 C< FCA; <;'=C B6@ D< ;<I1=<@ C1= @<F;<< EA= A CB @<;D 6 9 ;' C< I1 6< G ; 1 9 C< ;<AF 1 A; GA; A EC ;<F<1I<@ 1 E1 C 1 @1? A 1 A @ ;A?<' A @<' CT <ABD;1A @A C< . = <6 JB< A @ < 61?C < <@ . < . D<;' 9 C1= GA; A" A @ C< 6 . < . D<;' 9 1 A G<;CAG=A EC A ;<6 1 ? BG 6<?1 1 . AF A= C< 9 B @A 1 9 C< = F1A6 ;@<;A =1 F<;<6 @<=1;<@ C< . A1 < A F< 9 C< = 1 B 1 A ;<G61<@ C< @<F;<< 9 <G < . D<;' D [C< A;FC AFF ;@1 ? C< CA; <;& A E ;> EC1FC F;<A <@ A ?;<A =< =A 1 1 B; G<A @ FAB=<@ 1 = AB C ;3= @1=?;AF< Y C< F . . A @ 9 C< A 1 A6 0BA;@ EA= A>< 9; . B @3 ; 1=A @ C< ;<=B6 9 C< <E <6<F 1 EA= =BFC A= A =E<;<@ C< C G<= 9 C< . 1 1= ;

C ; 6 D<9 ;< C< F 91; . <@ C1= AB C ;1 D C< @<F;<< 9 C< 7 C Y =;;1A?< 9 C< <G < . D<;A C< >1 ?' CA@ < @<AI B;<@ A= 9A;' A= G ==1D6< DQ@ C@ @7+ ??? K?' G<;G< B1 9 C1= ;AF<A @ CA@ @< . A @<@ 9 ;' C1= <GC<EA CA;6<= <;@1CA @A %B><' @< (<;;1A C< CA @ 9 C< +;1 F<== A;1< A; 61 < @< (B;D A @AB?C <;' 9 C< - 1 ?' 9 C< E 1F161<= C< . A;;1A?< EA= F<6<D;A <@ 1 C< . C 9 SB <A *

C< . <A 1 . < C< . 1=<;1<= 9 C< F B ; E<;< A C<1;' C<1?C GG;<==<@ D A CB @;<@ A @ 919 C B=A @ 9 ;<1? ; G=A EC A @1= ;1DB <@ A . ?= C<;' 9 ; ;<==<=A I<;DB; C< <@ 1 E1 C ;B1 B= FCA;?<=A A @ ; D @ . <= 1F 9AF 1 =A ;A F< CA@A 1 A@@1 1 A D<A;' C< C ;; ;= 9 9A . 1 < C< F 1 BA6 ;A1 = 9 *' 1 B @A <@ C< G6A1 =A @<= ; <@ C< C G<= 9 C< 9A; . <;=A A @ =G;<A@ F A?1 B= @1=<A=<= A . ?= C< FA 6< 66 C<=<

4 P +<M$A ?@#@J7><@C SB7Q ((A>KA <M@ >D<MB7 B3 >' 7@?@+< >+C @N?@##@+< M$A<B7K B3<M$A L@7$BC P <M@ ; BA< >CG>+?@C L7$+?$L#@A B3 ; BC@ ; $J@7>#$A ; S@7@ A<7>+ @#K >##$@C S$<M $C@>A <M@ ; BA< 7@LD +>+< <B +@S 7>+?@ 0% $@#0 >A<@# P $A<B7K B3 <M@ @A<B7><$B+ 0

FA6A . 1 1<=' 9A16<@' ' = 196<' C<' <PG6 =1 =' 9' G 61 1FA6' CA <(' A @' 1 ' C<' <A;
2' C<' 6A <' ;A?1F'=F< <=' 9' 0 ;< D6<' E<;<' ;<G; @BF<@' A
=(' EC<;<' 0< <;A6' A B<6' EA=' 1 ' F . . A @((' A @' EC<;<' KB+A') B7@'
A' F =G1;AF ' EA=' @1=F I<;<@' ' C<' I 1F<' G9' I< ?<A F<(
@N@?D<$B+A
;A C<;' CA ' 9' KB= 1F<(EA=' C<A;@' A ' C<' ;1A6' 9' C<' AFFB=<@(' A @' C<
G 61 1FA6' =FA99 6@' EA=' 1 B @A <@' E1 C' D6 @
' <E' F F ;@A ' CA@' D<< ' =1? <@' A ' . <(' C; B?C' C<
<P<; 1 =' 9' ' @<' (6AFA=(' C<' ;< FC' A . DA==A@ ;' ' C<
= I<;<1? ' G 199' C1=' ;<A ' F =1@<;AD6 ' <P < @<@' C<' 5
B . D<;' 9' D1=C G;1F=(' EC1FC' CA@' D<< ' 91P<@' A ' 919 ' D ' C<' F F ;@A '
. A@<' E1 C' AG 6< N DB ' A' 6AE' ' C<' =BDK<F ' D<1 ?' G;<=< <@' ' C<'
CA . D<;=(' EA=' ;<K<F <@(' A @' C<' >1 ?' 61 . 1 <@' C<' B . D<;' 9' D1=C G=' '
CA ' 9' C<' @<GA; . < =
. <' G 61 1FA6' 6AE=' E<;<' A@ G <@' 1 ' C<' F B;=<' 9' C1=' =<==1 (A @'
<' 9' C< . ' 91P<@' F<; A1 ' G;B@< ' 61 . 1 =' ' C<' 6AE' GA==<@' 1 ' C<' G;<I1 B='
=<==1 (EC1FC' =B=G< @<@' 1 @1I1@BA6' 61D<; ' (B ' C<' . = '
1 . G ; A ' 6<?1=6A 1I<' AF ' 9' C1=' =<==1 ' EA=' C<' <6<F ;A6'
6AE(EC1FC(9 ;' C<' 91;= ' 1 . <' =1 F<' C<' ;<= ;A 1 (=A F 1 <@' A' 6<?A6'
F B;=<' 1 ' C<' . 1 A 1 ' 9' @<GB 1<=' '<= AD61=C<@' @1;<F ' <6<F 1 =(' A @'
91P<@' C<' JBA6191FA 1 =' 9' <6<F ;=' A ' C;<<' CB @;<@' 9;A F=(' A @' 9' C =<'
<61?1D6<' 9 ;' <6<F 1 ' A ' A' C B=A @' 9;A F=' C<' CA . D<;' EA=' ' D<'
;< <E<@' D ' 919 C=(' A @' C<;<' EA=' ' D<' DB ' <' F 66<?<' 9 ;' <AFC' @<GA; 0
. < ' C1=' 6AE(G; G =<@' D ' C<' 0 I<; . < (EA=' A@ G <@N 1 ' EA=' C<'
?;<A <=' F F<==1 ' EC1FC' CA@' < ' D<< ' . A@<(' C<' F = 1 B 1 A6' =G1;1 (
A @' 1 =' ;<=B6 =' G; I<@' C<' <P ;< . <' A B;<' 9' C<' @1991FB6 1<=' D ' EC1FC' C<'
;<1? 1 ?' @ A= ' EA=' =B;; B @<@' C<' @1=FB==1 ' 9' C<' DB@?<' EA=' '
= ; . (A @' C<' 0 I<; . < (EC1FC' EA=' I<C< . < 6 ' GG =<@' ' C1='
G 1 ' D ' ' 166#6'<' A @' (A6@(G; G =<@' ' ?1I<(A=' A' @ A 1 ' ' C<'
- ' Q ! C<' 7"(" " "' C<F A;<=' 9' E @=' EC1FC' A' G;<I1 B='
. AK ;1 ' CA@' ?1I< ' ' ' C<' F6<;? ' . ' . 1661 =' 9' ;< =(6 (=<FB;<@'
D ' C<' 6@' G; G<; ' 9' C<' FCB;FC ' C1FC' = 166' ;< . A1 <@' 1 . = 6@(E<;<'
I <@' 9 ;' C<' F6<;? ' A=' A ' 1 @< . 1 ' 9 ;' ECA (C< ' CA@' 6 = ' C<'
CA . D<;' 9' +<<;=' ;A 191<@' C1=' G6A N A @' E ' @A =' 6A <;(' C<' * C'
A;FC(C<' =<==1 ' EA=' F6 =<@
AE=' 9' ?;<A ' 1 . G ; A F<' E<;<' 1 ; @BF<@' 1 ' C<' 9 66 E1 ?' <A; '
+;A F<' G ==<==<@' A ' C1=' G<;1 @' A ' A; . ' 6 ' 1 ' A . <N I 6B <<;='
DB ' 166' =BGG61<@' C<' I 1@=' 1 ' B;'6<?1 =(' A @' C<;<' EA=' A ' B;?< ' <F<==1

EA=' @1=AI E<@' D ' A66' C<' G;B@< ' . < ' 9' C<' A61=' GA; (' A @' C<' AB C ;' 9' EC1FC' EA=' <' 9' C<' F 91@A =' 9' C<' B ' @3 ; 1=(' ' @<' 1 ; <=(' A' 1 1= <;' 9' A <(' A @' A' M<A6 B=' F @BF ;' 9' C<' 91;=' <? 0 1A 1 =' EC1FC' 6<@' 1 ' ' ' C<' ;< B; ' 9' C<' (B;D =' ' C<' 1 = 10 ?A 1 ' 9' C<' +;1 F<(' ' @<' 1 ; <=' E; <(' A' . < . 1;' A@@;<==<@' ' C<' A661<@' = I<;<1? =' A @' C<1;(' . 1 1= <;=(' 1 ' EC1FC' C<' <PG;<==<@' C<' . =' =<;1 B=' A P1< ' E1 C' ;<=G<F ' ' C<' 1 <; A6' =6A <' 9' C<' >1 ?@ . ' [' I<; C1 ?' EA=' ' D<' 9<A;<@(' C<' =A1@(' [' 9; .' C<' <PG6 =1 ' 9' ;<I 6B0 1 A; ' GA==1 =' A=' = ' A=' C<' A661<@' A; . 1<=' =C B6@' CAI<' D<< ' E1 C@;AE (' 19' C<1;' ;<9;<A ' =C B6@' ' D<' AFF . GA 1<@' D ' A' FCA ?<' 1 ' C<' . 1 1= ; (' A @' C<' @1= . 1==A6' 9' C =<' 9' 1 =' . < . D<;=' EC ' CA@' <PAF <@' 9; .' C<' - 1 ?' C<' @<F;<<' 9' C<' 7 C' 9' <G < . D<;(' A @' C<' @1== 6B 1 ' 9' C<' CA . D<;' 9' 7 `' C1=' . < . 1;(' < 1 6<@' [' ' <F;<' <(`FA . <' ' C<' > E6<@?<' 9' C<' 1 1= <;' 9' + 61F<(' ' %<FAM<=(' EC ' GBD61=C<@' 1 ' 1 ' C<' 0 I<; . < ' K B; A6=(' 1 I >1 ?' C<' F @< . A 1 ' 7 ;A F<' BG ' C<' GA; ' D ' EC1FC' 1 ' CA@' D<< ' @1F A <@(' A @' =C E1 ?' CA ' CA ' GA; ' EA=' 1 ' 9AI B;' 9' C<' FFBGA 1 ' 9' ;A F<' D ' 9 ;<1? ' ; G=' C1 ?' F ;10 DB <@' . ;<' CA ' C1=' <F;<' <' ' 1 F;<A=<' C<' @1= A F<' EC1FC' =<GA;A <@' C<' 1 @<G< @< =' ;' 1D<;A6=' 9; 1' C<' A61= =(' A @" ' ;< @<;' C<' (B;D =' B G GB6A;' D ' ;<G;<=< 1 ?' C< . ' A=' G ==<==1 ?' C<1;' F; E ' A ' C<' E 6' 9' 9 ;<1? <;=(' A @' 6 ' ;< A1 1 ?' 1 ' D ' C<' A1@' 9' C<1;' =BGG ;

C<' B=<9B(' 1 96B< F<' 9' ' @<' 1FC<61<B' F . DA <@' C<' <I16' <99<F =' G; 0 @BF<@' ' C<' . 1 @=' 9' C<' A 1<@' = I<;<1? =' D ' C<' . < . 1;' 9' ' @<' 1 ; <=' CA >=' ' C1 . (' C<' . G<; ;' 6<PA @<;' A @' C1=' A 1<=(' A==< . D6<@' 1 ' F 9<;< F<' A ' 1P 6A CAG< <(' F =< <@' <IAFBA <' C]' ;< FC' 9 ; ;<==<=' A @' ' ;<FA66' C<1;' A; . 1<=(' 3B7@$ +' >7 ; $@A I A @' 919' << ' . 1661 =' 9'= F>=' 1 =F;1D<@' 1 ' C<' ?;<A ' D >' 9 C<' GBD61F' @<D ' =B991F<@' ' JB1@A <' C<' @<D ' EC1FC' ;A F<' E<@ AD; A@' C ; 6 ' A9 <;' C1=' ?;<A '<I< (' EC1FC' @1= 1 ?B1=C<@ C<' <A;' (' A @' ' EC1FC' ' @<' 1FC< <B' CA@' C<' 6 ; I' D<3 B><@ 9' A AFC . ?' C1=' A . <(' CA ' 1 1= <;' ?AI<' 1 ' C1=' ;<=1? A ' CA+<@7@A<@C0' 1 (' D< <I1 ?' A=' C<' @1@' CA ' C<' B?C ' ' ;< 1;<' 1 ' 9AI B;' 9' C<' G GB6A;' A . <=' 9' A B<6' A @' A9A < <(' EC1FC' CA@' ;<F< 6 ' 1==B<@' 9; .' C<' <6<F ;A6' B; ' ' ;< B; ' 9 ;' C<' =<; I1F<=' EC1FC' C<' CA@' ;< @<;<@' ' C1=' F B ; (' C<' CA . D<;=' I <@' C1 . ' A' ?19 ' 9' 919 ' C B=A @' 61I ;<A' 9' = F>=' N DB ' A6 C B?C' 1FC<61<B' CA@' ' 9 ; B <' C<' @<F61 <@'

7" ! ! / 0" > 0 ! " : !> $ 8* -

AFF<G 9 ;C1 . =<69 C1= . A? 191F< ;<EA;@ Y EA= A C C<A@ 9 C 0 I<; . < A A I<; @1991FB6 G<;1 @ A @ C1 . G<;1 B= 9 ;F 9 F1;FB . 0 = A F<= 91;<JB< 6 F . G<66<@ C1 . D< @<A9 C1= E ?< <; B= 1 . GB6=<= JB1 1 ? C C<A@ 9 A99A1;= C 6<9 D<C1 @ C1 . C ;<GB0 A 1 9 A . A 9 C B; EC =< FCA;AF <; EA= =BG<;1 ; A C @1?0 1 1<= A @ 6 9 9B F 1 = EC1FC C<CA@ 9166<@ 6A; . <@ A C <=B6 9 1C< 6A= <6<F 1 = EC1FC E<; 9 ; C . = GA; 1 9AI B; 9 C 1D<;A6= C CA@ <PG;<==<@ A @<=1;< CA C 1 1= ; =C B6@ 9 ; . A A661A F E1 C C 1?C 9 C CA . D<;'z A @ CA C 6AE 9 <6<F 1 = =C B6@ D< . @191<@ 1= E1=C<= 1 C1= ;<=G<F E<;< =CA;<@ <1 C<; D z %<FAM<= EC EA= C< 1 C1?C 9AI B; E1 C B1= : ; D = . < C<; = 9 C1= F 66<A?B<= C CA . D<; 9 %<GB 1<= A C F . . < F<0 . < 9 C <E =<==1 CAI1 ? @<F6A;<@ 1 =<69 < <;?< 1FA66 1 1 = A@@;<== C -1 ?A?A1 = A . @191FA 1 9 C <6<F ;A6 6AE C ;< 1;< . < 9 C + ;<=1@< 9 C 1 . F16 EA= @<F1@<@ C CA . D<;' 9 +<<;= QC E<I<; C G; G =1 1 9 < 9 1 = . < . D<;= (A; CW0 6< . < 9 C G; =F;1D<@ @1;<F ;= 9 C C ;BF 1@ ; I <@ A ;<= 6B 1 1 9AI B; 9 A FCA ?< 1 C <6<F ;A6 6AE C1= ;<= 6B 1 EC1FC EA= I<C< . < 6 GG =<@ D C . 1 1= <; = A @ <; 66A;@ EA= ;<K<F <@ D C @<GB 1<= C F 961F D< E<< C E CA . D<;=

4 M@ 3B##BS$+ $A >+ @N<7>?< 37B ; <M@ +BJ#@ #@<<@7 A@+< JK $?M@#$@D B+ <M$A B??>1 A$B+ <B <M@ 7@A$C@+< B3 @>?M B3 <M@ <SB M> ; J@7A %

a &(+3 ' - '+&(, + ;

P > ; <BB L7BDC B3 <M@ <@A<$; B+K B3 BBC0S$## J@A<BS@C DLB+ ; @ JK <M@ $+ 0S$<M <M@ ?B+?D77@+?@ B3 <M@ <SB M> ; J@7A <B <M$+Q B3 C@?#$+$+ <B >??@L< $<] JD< #@>7+ 37B ; <M@ RBD7+>#A <M>< $< $A $+<@+C@C <B J@A<BS DLB+ ; @ >< <M@ @NL@+A@ B3 <M@ <><@ >+><$B+># 7@?B ; L@+A@ ?>++B< L7@G>$# DLB+ ; KA@#3 <B >##BS <M@ JD7C@+A JK SM$?M <M@ Q$+ CB ; $A >#7@>CK BLL7@AA@C <B J@ $+?7@>A@C B+ ; K >??BD+< 3 CD7$+ ; K ; $+$A<7K M>G@ J@@+ >J#@ <B CB >+K A@7G$?@ <B 7>+?@ >+C <B ?B+<7$JD<@ <B <M@ 7@#@>A@ B3 $<A <@77$<B7K 37B ; 3B7@$ + B??DL><$B+ > ; +B< <M@ #@AA C$A<7@AA@C >< <M@ Q+BS#@C @ <M>< ; K ?BD+<7K $A BLL7@AA@C JK @+B7 ; BDA C@J<A BB ; >+K ?>#> ; $<$@A M>G@ 3>##@+ DLB+ $< <BB ; >+K B3 $<A ?$<$V@+A M>G@ AD33@7@C ; $A3B7<D+@A >+C $< M>A A<$## <BB ; >+K SBD+CA <B M@># 3B7 ; @ <B AD33@7 ; K BS+ 3B7<D+@A <B J@ $+?7@>A@C >< $<A @NL@+A@ M@ @A<@@ ; 3 ; K ?BD+<7K <M@ BBC0S$## B3 <M@ $+ >+C <M@ <@A<$; B+K B3 ; K BS+ ?B+A?$@+?@ >7@ AD3$$?$@><7@?B ; L@+A@ 3B7) $?M@#$@D 0

+ AL$<@ B3 <M$A #@<<@7 <M@ M> ; J@7A GB<@C) C@ $?M@#$@D > CB<><$B+ B3 3$3<K <MBDA>+C #$G7@A B3 A<B?QA SM$?M M@ >??@L<@C >A > +><$B+># 7@S>7C >+C <M@+ <7>+A3@77@C >A >+ @+CBS ; @+< <B <M@ MBAL$<>#A B3 B7C@>DN

3 M@ $ M< A$C@ B3 <M@ M> ; J@7 S>A <M>< B+ SM$?M L < <M@ @N<7@ ; @ ; @ ; J@7A B3 <M@ BK>#$A< L>7<K M@ @N<7@ ; @ ; @ ; J@7A B3 <M@ $J@7># L>7<K A>< BLLBA$<@ <M@ ; B+ <M@ #@3< M@ ; BC@7><@ ; @ ; J@7A B3 @>?M L>7<K 3B7 ; @C <SB 7@>< 3>?<$B+A SM$?M S@7@ +> ; @C <M@ $ M< >+C @3< @+<7@

D<FA . < @A ' D ' @A ' . ;< I1;B6< (A @'51 ' AGG<A;<@' B;?< 6 ' <F<==A; ' 9 ;' C< GB;G =< 9' ;<<= AD61=C1 ?' JB1< B@<1 ' 61<' D = .' 9' C< <?1=6A0 B;<(' @1== 6I< C< CA . D<;' 9' %<GB 1<=(;' ' . @19 ' C< I <=' 9' C< CA . D<;' 9' +<<;=

<I<;A6' . < . D<;=' 9' C< AD1 < (' A1 1(61(+A=JB1<;(A @' &Y' E1 C@;<E' . C' C< %B><' 9' 1FC<61<BN' A @' C<

- 1 ?(A ' C< =B??<= 1 ' 9' ' %<FAM<=(AGG 1 <@' 0< <;A6' FAD1 <' A @ %<== < +;<=1@< ' 9' C< B F16' ' <;;< ;<F<1I<@' < 1 ;= #Y C< =<A6=(A @' A;=CA6' 0 16I1 ' A1 ;' ;< A1 <@' C< 3< 6 < ='1=6 G ; 9 61 ' 9 ;' EA;' ' B1=' EA=' G6AF<@' A ' C< C<A@' 9' C< 91 A F<=(A @' ' + ; A6' A ' C< C<A@' 9' C< . A;1 <' ' %<FAM<=' D A1 <@' C< G ; 9 61 ' 9' C< <;1 ;(A @' EA=' 1 ' ;<A61 ' C< C<A@' 9' C< <E' 1 1= ; ' C< ;<=B6 ' 9' C< <6<F 1 =' 9' 2' A @' ' EA=' ' ?1I<' A' . AK ;1 ' ' C< . @<;A < 1D<;A6' GA; (A @' 1 ' EA=' ' D< 9<A;<@' CA ' C<;< E B6@' ' 6 ?<;' D< A ' =G<F1<=' 9' CA; . ' D< E<< ' 1 ' A @' 61< CA . D<;' 9' +<<;=

<6 1 ?' ' C< =BGG ; (1 ' C< CA . D<;' 9' %<GB 1<=(9' C< <9 (EC1FC' ?AI<' 1 ' A' 1D<;A6' A @' F = 1 B 1 A6' . AK ;1 (C< 1 1= ; ' @ $A#><$G@' @A0' G;<=< <@' 1 ' C< F B;=< 9' C< =<==1 ' =<I<;A6' 6AE=' 9AI B;' AD6<' ' C< GBD61F' 61D<; 1<=N C< . =' 1 . G ; A ' 9' EC1FC' E<;< C =< ;<9<;;1 ?' ' 61<' G;<==' A @' C< K B; A6=(C< 1 @<G< @< F< 9' ;<=G<F1 ? EC1FC' CA@' D<< ' C1 C<; ' G; I1=1 A66 ' =B=G< @<@' C< ' ? F(E<;< G; G =<@' D ' ' <;;<(- <<G<;' 9' C< <A6=(A @' < @<@' ' =<FB;< C< 61D<; ' 9' C< G;<==(EC16=' A ' C< =A . < 1 . < ?BA;A <<1 ?' C< . A1 <' _ A F< 9' ;@<;' A @' C< GBD61F' G<AF<' C< 91;=' 9' C<=< G; G =<@' 6AE=' AB C ;1M<@' C< 9;<< GBD61FA 1 ' 9' A66' G<;1 @1FA6' 1 1 ?=(EC16=' A ' C< =A . < 1 . < 1 ' @<F6A;<@' <I<; ' A AF>' ' ? @' . ;A6=' ' D< GB 1=CAD6<' E ' C<;=' F A1 <@' C< ;<?B6A 1 =' ' D< < 9 ;F<@' 1 ' C< FA=< 9' G<;1 @1FA6' GBD61FA 1 =' A @' K B; A6=(1 ' ;<=G<F ' ' EC1FC' ' <;;< EA=' F < ' ' @< . A @' C< ;<?1= ;A 1 ' 9' C< A . <=' 9' C< G; G;1< ;=' A @' ;<=G =1D6< <@1 ;=(A @' C<Y@<G =1 ' 9' A' . @<;A < =<FB;1 ' C< G;1 F1GA6' A; 1F6<=' 9' C =< G; G =<@' 6AE=' G; C1D1 <@' C< A 1F1GA ; ' =<1MB;< 9'K B; A6=' A @' G<;1 @1FA6=(A @' ;<9<;;<@' ' C<KB@? . < ' 9' A'KB; ' A66' F;1 . <=' F . . 1 <@' C; B?C' C< G;<==(E1 C' C< <PF<G 1 ' 9' 61D<6=' A?A1 = ' G;1IA < G<;= =(EC1FC' ;< . A1 <@' =BDK<F =' 9' 1 JB1; ' D ' C< F ;;<F 1 A6' G 61F<' ' <(91 A66 (EA=' ' D< A66 E<@' ' G; I< C< ;B C' 9' @<9A . A ; ' A66<?A 1 =(Y' ' ' CA@=C ; 6 ' D<9 ;< ;<G6AF<@' ' 0 ;I< ' A=' 1 1= <;' 9' 1 A F<

0 0

<PF<G ' 1 ' FA=<=' 1 ' EC1FC' C< ' E<;<' . A@<' A?A1 =' G<;= =' AF 1 ?' 1 ' A' GBD61F' FCA;AF <;' C1=' 6A <;' A; 1F6<&' EC1FC' ;< @<;<@' G<;= =' 1 ' AB C 0 ;1 ' ;<=G =1D6<' A66' 9 ;' C<&' . A <;' 1 ' EC1FC' C< ' G<;9 ; . <@' C<1;' @B 1<=&' EA=' =BGG ; <@' D ' <; A;@&' <=G<F1A66 &' E1 C' C<' . =' I<C<0 . < ' <6 JB< F<' ' [9' B' @< <; . 1 <&'' C<' =A1@&' [' CA ' 1 ' 1=' ' ' D< G<; . 1 <@' ' <66' C<' ;B C' E1 C' ;<=G<F ' ' C<' AF =' 9' C<' GBD61F' AB C 0 ;1 1<=&' B' E 6' F =<JB< 6 ' @<F1@<' CA ' = F1< ' @ <=' ' D<6 ?' ' 1 =<69&' CA ' 1 ' 1=' C<' G; G<; ' 9' 991F1A6=&' A @' CA ' C< ' G ==<==' 1 ' A=' C< ' . 1?C ' G ==<==' A' 9<B@A6' <;;1 ; ' ' ' ' 9' B';<K<F ' C1=' A; 1F6<&' B' . B= ' <1 C<;' ;<= 6I<' CA ' 9 ;' C<' 9B B;<' B' E166' CAI<' ' C1= ; &' ;' A ' 6<A= ' . B= 391P' A' F<; A1 ' B . D<;' 9' <A;=' A9 <;' EC1FC' 1 ' E166' D<' 6AE9B6' ' =G<A>' C<' ;B C' E1 C' ;<=G<F ' ' C<' AF 1 =' A @' C<' E ;@=' 9' GBD61F' . < ' (B ' @A ' C< A B;<' 9' B;' 0 I<; . < ' A @' C<' <F<==1 1<=' 9' C<' A 1 ' @< . A @' CA ' B;' C1= ; ' =C B6@' <I<; ' @A ' F . . < F<' 9 ;' B=&' A @' CA ' G = <;1 ' =C B6@' D<' B;' GBD61F '' C<' C;<<' 6AE=' G; G =<@&' D ' C<' - <<G<;' 9' C<' <A6=' E<;<' A@ G <@&' A9 <;' A ' A 1 . A <@' @1=FB==1 &' D ' A' 6A;?<' . AK ;1 ' 1 ' <AFC' CA . D<;N

C<' = A <' 9' C<' A 1 ' E' D<?A ' ' D<' ;A JB16'N 9 ;<1? ' ; G=' ' 6 ?<;' < FB . D<;<@' 1 =' = 16'N F . . <;F<&' 1 @B= ; &' A @' A?;1FB6 B;<' 96 B0 ;1=C<@&' A @' GBD61F' F;<@1 ' D<?A ' ' ;<I1I<N' <I<; C1 ?&' 1 ' 9AF &' ?AI<' G; . 1=<' 9' A' CAGG ' 9B B;<' (B ' GA; ' =G1;1 ' EA=' = 166' A;@< ' A @' 1 . 0 G6AFAD6<' C<' A61= =' ;<9B=<@' A ' =G<F1<=' 9' A661A F<' E1 C' C<' =1 F<;<' = 1 B 1 A61= =&' A @' E<;<' B E1661 ?' ' . A><' C<' =61?C <=' 61D<;A6' F 0 F<==1 'N EC16=' C<' 1D<;A6=&' 9 ;' C<1F' GA; &' > <E' ' C E' ' D<' GA 1< &' A @' F . G; . 1=<@' C<' 9B B;<' 9 ;' C<' =A><' 9' D A1 1 ?' A' < . G ;A; ;1B . GC ' C<;<' E<;<' . A ' @1= 1 F ' 9AF 1 =' 1 ' C<' D = .' B3'<M@' L>7<K' $J@7># 9' C<' 1D<;A6' GA; &' C<' . =' I1 6< ' 9' EC1FC' EA=' C<';<I 6B 1 A; ' GA; &' EC1FC&' 6 >1 ?' BG ' C<' (B;D =' A=' C<' 1;;<F F16AD6<' < < . 1<=' 9' C<' <I 6B 1 &' C G<@' ' I<; C; E' C< . ' C<' @<GB 1<=' D<6 ?1 ?' ' C1=' GA; '=A ' A ' C<' <P ;< . <' <9 ' 1 ' C<' CA . 0 D<;&' EC16=' A ' C<' <9 ' < ;<' E<;<' C<' = 1 B 1 A61= =&' EC ' C 6@1 ?' AD I<' A66' C1 ?=' ' C<' ?BA;A <<=' ?1I< ' D ' C<' FCA; <;&' D<61<I<@' CA ' 1 ' 1 =' ;1? ; B=' D=<; IA F<' A6 <' 6A ' C<' =A9< ' 9' ;A F<' ' C<' D = .' 9' C<' 6A <;' GA; ' C<;<' <P1= <@' A' = . A66' ?; BG' 9' . < ' EC =<' G 61 1FA6' G1 1 =' E<;<' DA=<@' ' F<; A1 ' C< ;1<=' 9' A ' <6<IA <@' A @' AD= ;AF ' A B;<&' A @' EC ' A661<@' C< . =<6I<=' E1 C' C<' E1=<;' . < . D<;=' 9' C<' 1?C &' ;<9B=1 ?' ' ;<?A;@' C<' ;1?C =' 9' C<' F; 1I ' A=' @1= 1 F ' 9; .' C =<' 9' C<

F B ; A @F =1@<;1 ?C< .A=<JBA66 1 I1 6AD6< C< . < . D<;= 9 C1=
GA; E<;< A . <@ C< % F ;1 A1;<=A @ C< . =G; .1 < 9 C< .E<;< < A;@@< (; ?61<A . 166< S ; B; .A1;<=
@A A @ @< (A;A <1 C< CA . D<;=A @ 0B1M 1 C< G;<== C<
1 1= ; @B;1 ?C< 6<?1=6A 1I< =<==1 9 A @ !EA=F = A 6
1 CA; . E1 C C1= GA; EA;@= C< < @ 9 CA =<==1 C E<I<;
A I1 6< ;BG B;< >G6AF<D< E<< C< AD1 <A @ C< <P ;< . <G ; 1
9 C< 1D<;A6 GA; A G< 1 1 =CA@D<< G;<=< <@ 9 ; 61<GB;G =<
9 D A1 1 ?C<9 ; . A6 ;<I FA 1 9 A66 C< <PF<G 1 = . A@<1 C< 6A=
6AE 9A . <= C< DK<F 9 C<=<G< 1 1 =EA= D A1 C< ;<FA66 9
A EC CA@D<< DA 1=C<@ D A . <A = 9 1 @1I1@BA6 GA;@ = =BFC A=
E<;< 9;<JB< 6 = 61F1 <@YA @ D A1 <@ DB D @ ?< <;A6 AF 9 C<
6<?1=6A B;< <;I ;<K<F <@ C =<G< 1 1 =EC1FC = B?C
G< ;A F< A66 EC CA@D<< G; =F;1D<@ E1 C B @<$<$B+(9'3>GBD7
B3'<M@' @N$#@A
@1= 1 F 1 A @ <PF6A1 . <@ [<FA=< 9 C< ;<?1F1@<=
<I<;'z C1= <PG;<==1 @<<G6 1;;1?A <@ C< <9 ?9 C< ==<. D6 A @
EA= 1;<91;= =1? 9 C< F . G6< <;BG B;<EC1FC = >G6AF<D< E<<
%<FAM<=A @ C< 1 @<G< @< ;' 1D<;A6 GA; C< =A . <=<==1
C< DB@?< EA= 91;= @1I1@<@ 1 E @1= 1 F 6AE=A CA 9
<PG< =<=A @ CA 9 ;<F<1G = C< 91;= E<;< 91P<@ A ; F<1GB
A =B . 9<1?C C; . @;<@ A @ =1P 1 < . 1661 9 B;' CB @;<@ A @ =1P << '
C B=A @ 9;A F=K A @ C< 6A <;' E<;< <= 1 . A <@ A <1?C CB @;<@ A @
1 < < . 1661 9 B;' CB @;<@ A @ C1; 91I< C B=A @ 9;A F= C<
6<?1=6A 1I< =<==1 EA= F6 =<@ C< 2 C 9 SB6 A !
_ C< <6<F 1 = EC1FC >G6AF<1 C1= <A;'9 ; C< ;< <EA6 9 C< C1;@
=<;1<= 9 C< CA . D<;' 9%<GB 1<=A E<;< FC1<96 . A@<B @<;' 61D< K<1?#1 <
C< <I<; 1 F;<A=1 ?1 96B< F< 9 C< 1D<;A6 GA;6 C<
<6<F ;= 1<6@<@A= 9 < CAGG< =A C< =B??<= 1 = 9 I1 6< A @
GA==1 A < . < A 9 C< . < . D<;= FC =< E<;< G< 6 C = 16< C<
(B;D =A @ C< A . < 9 C< I< 1 A61= O;W? 1;< RD+?<$B+'B3
EA= < 9 C =<@;AE 9; .' C< B; Y C< A = a i !1=K='
GA; B <;<@ A F; 9 C ;; ;A @ ;<GB6=<@ O;W? 1;< 9; .' C<
CA . D<;
<;1 B=6 A6A; . <@ A C< ;<=B6 9 C< <6<F 1 = A @ A C< 1 . G<;1 B=
@< . A @= , 9 C< 1D<;A6=A B1= : 1<6@<@ C< = 61F1 A 1 = 9 C1=
_

4 M@ JJH ! 7H B$7@ S>A >+ B#C B+G@+<$B+>#$A< J$AMBL B3 #B$A SMB $+ <M@ 3$7A<
A$<<$+ B3<M@ B+G@+<$B+ J>C C@ ; >+C@C <M@ >JB#$<$B+ B3 7BK>#<K

7 ' ! > ' ! / ' ' 0 " > ' 0 ' ' : 4 ' $ ' 8 * '

D; C<;' A @' 9A . 16 (A @' ;<= 6I<@' ' . @19 ' C<' <6<F ;A6' 6A E N A @' ' ' %< AM<=3 %<FAM<=(E' F =1@<;1 ?' A=' <F<==A; ' ECA ' C<' CA@' = . <' G1 ; vA @ . C=' D9F9 ;<' 6 ><@' BG ' A=' B=<6<==' A @' @A ?<; B=(C B?C ' C<' =C B6@' D<= ' 9 ;EA;@' C<' . A;FC3(I1< I=' D ' @+<7@' E1 C@;AE1 ?' 9; .' C<' <9 ' A @' A66 1 ?' C1 . =<69' E1 C' C< 1?C ' < ;<' C1=' 9;<JB< ' =F166A 1 ' AFF ;@1 ?' ' C<' <F<==1 1<=' 9' C<' . . < (' EC1FC' IA=?1I< ' C<' A . <' 9' [' =<< =AE1 ?(`' A6 C B?C' 9 < ' B=<9B6' ' C<' GA; ' 9' A' >1 ?(F B6@3 ' DB ' F . G; . 1=<' C<' FCA;AF <;' 9' A' 1 1= <;' B @<;' A' F = 1 B 1 A6' ? I<; . < ' <I<;A6' 9' C<' F 66<A?B<=' 9' ' %<FAM<=' . @<;= @' CA ((19' C< ' F B6@' ' 6 ?<;' G<;=<I<;<' 1 ' C<' 61 <' 9' F @BF ' ' EC1FC' C< ' CA@' < <;<@(C< ' =C B6@' ?1I<' 1 ' C<1;' ;<=1? A 1 =N C< ' @1@' = (A @' ;< 1;<@' E1 C' C<' GBD61F' <= << . ' C<=<' I<;<' <==1< . ;=' %<== <(B1=(A @' 0 1I1 ' A1 ;(EC ' E<;<' ;<0 G6AF<@' D ' ' +A=JB1<;' 9 ;' 9 ;<1? ' A99A1;=(' 9 ;' C<' <M@' >J$+@<' . A A?< . < ' 9' C<' 91 A F<=(A @' A B; ABD B;?'9 ;' EA;' 7@A$C@+<' 9<M@' BD+B$' ' %<FAM<=' 9 ; . <@' C<' <E' AD1 < (A @' ;<F<1I<@' C<' 1 6< 9' +;<=1@< ' 9' C<' B F16' 1=' F B;=<' 9' F @BF (EC1FC' CA@' D<F . <' B @<F1@<@' A @' IAI<;1 ?(1;;1 A <@' C<' 1D<;A6=' E1 C B ' 0 F161A 1 ?' C<' A61= =N A @' C<' 6A <;' <I<;' ;<6AP<@' 1 ' C<1;' A AF>=' B 16' A' 9;1?C 9B6' <I< ' < AD6<@' C< . ' ' I<; C; E' C1 . (A @' ;A =9<;;<@' C<' ? I<; . < ' ' C<1;' CA @=

C<' %B><' @<' (<;;1(=<F @' = ' 9' B ' @3 ; 1=(EA=' A==A==1 A <@' ' C<' <I< 1 ?' 9' C<' 8 C' 9' <D;BA; ("(A=' C<' EA=' 6<AI1 ? CH1%B3<$@< C<' G<;A(D ' A' ;;< FC' A . <@' BI<6 ' <' 61I<@' DB ' A' 9<E' C B;=' A9 <;' ;<F<1I1 ?' C<' 9A A6' E B @(A @' <PG1;<@' 1 ' C<' A; . =' 9' C<' ; A6' 9A . 16 (GA;@ 1 ?' C1=' . B;@<;<;' C1=' G;1 F<(EC ' EA=' < @ E<@' E1 C' D6<' JBA61 1<=(A @' CA@' D<< ' . A;;1<@' DB ' A' 9<E' <A;=' ' A' B ?' G;1 F<==(C<' ?;A @ @AB?C <;' 9' C<' - 1 ?' 9' AG6<=(CA@' D<< ' 6 ><@' ' A=' C<' 6A=' ' C G<' 9' C<' <6@<=' ' D;A FC' 9' C<' (B;D = Y' 1=' @<A C(C<' ;<=B6 =' 9' EC1FC' E<;<' A ' F<' 9 ;<=<< (=G;<A@' <;; ;' C; B?C B ' +A;1=' A @' A66' ;A F<' C<' A61= =' C<6@' ' %<FAM<=' ;<=G =1D6<' 9 ;' 1 (A @' <' @<GB (' 6AB=<6' @<' B==<;?B<=(<I< ' FA;;1<@' GA; ' GA==1 ' = ' 9A;' A=' ' AFFB=<' C1 . ' 9' C<' F;1 . <' A ' C<' ;1DB <' ' IA1 '@1@' C<' 1 1= <;(9 ;' C<' GB;G =<' 9' AGG<A=1 ?' C1=' < < . 1<=(CA= < ' ' =BD . 1 ' ' C<' CA . D<;=' <P0 F<G 1 A6' 6AE=' @1;<F <@' A?A1 = ' 1 @1I1@BA6' 61D<; (A @' A?A1 = ' C<' G;<==&

=I BD$A' : 1' M>C' +B' ?M$#C7@+ ' >+C' <M@' ; >77$> @' B3' <M@' @#C@A<' B3' M$A' +@R_M@SA ' <M@' DQ@' C(+ BD#@ ; @ ' G$<M <M@' C>D M<@7' B3' BD$A' " (5, ' S>A' A<@7$#@

A= E<66 A= A <E 6AE 9 ; C ; <?B6A 1 9 <6<F 1 = < EA= B AD6<
JB<66 D C<=< . <A = C< = ; . C 1?C EC16= C< ;A1=<@ A C<;
< . G<= A?A1 = CB C <9 A61= = A @ 1D<;A6= F . D1 <@
D;1 ?AD B C1= 9A66 = 166 ;<=1= <@ 9 ; C1= G E<; EA= ; <@ 1 C<
A99<F 1 9<6 9 ; C1 . D C< . A;FC DB C< B @3 ; 1= A @ C<
%BFC<== @3 ? B6# . < = <A; <= 6 @< . A @<@ 9 C< 6A <;
C< @1= . 1==A6 1 1= 6AI B;I <@ CA C<1; E1=C<= E<;< A 6A= FAM<=A @=<F @
2;A <@ %<FAM<= ;<F<1I<@ A @B><@ . A @ C< < .
6 DA== @ A @ @< 1FC<61<B AFF<G <@ C< G;<=10
@< F 9 C< AD1 < EC1FC ;< A1 <@ A66 1 = . < . D<;= E1 C C< <PF<G 1
9 1 = C<A@ A @ 1 EC1FC 1 . < ;<G6AF<@ %<FAM<= A= 1 1= <; 9
C< <;1 ;
C< ?;<A <; G ; 1 9 B; G< EA= A C1= 1 . < 1 A = A < 9 I1 6<
<99<; I<=F< F<@ A @ C< G;<@1F 1 <PG;<==<@ D C< F<6<D;A <@
=A 1 ?@ [C< ;< FC <I 6B 1 E166 . A>< C< B; 9 C< F9;S '< < F<.
E ;6@& =<< . <@ AD B D< I<;191<@ C< F IB6=1I< . I<
. < = EC1FC CA@ = 6 ?A?1 A <@ ;A F< <P < @<@ 9A; A @ E1@<@ A @ 1 =
I 6FA 1F =C F>= . A@< C< . =<6I<= 9<6 9; . C< =C ;<= 9 C< F<A
C =< 9 C< @;1A 1F C< B; G<A = I<;<1? = CA@ 1 @BF<@ C<1;
G< G6<= =CA;< C<1; E CA ;<@ 9 ; AG 6< D 96A <;1 ? C<1; 6 I< 9
1 @<G< @< F<@ A @ G; . 1=1 ? C< . 61D<;A6 1 = 1 B 1 = A= A ;<EA;@ 9 ; A
I1? ; B= ;<=1= A F< C< < F; AFC . < = 9 C< ;< FC . G<; ; (B
EC< C< = ;B??6< EA= I<;@ EC< C< F . . G< < . CA@ D<< F;B=C<@
C< =AE @A ?<; 1 C =< I<; =< 1 . < = D . <A = 9 EC1FC C< CA@
6A <6 D A1 <@ =BFC G E<;9B6 =BGG ; 9 ;? C<1; G; . 1=<= ;<9B=<@
C<1; =BDK<F = C< F F<==1 = @< . A @<@ D C< G; ?;<== 9 1 . < A @
C< A@IA F< 9 C< G GB6A; 1 <661?< F<9 A @ <P<; <@ C< . =<6I<= 61<
B . = = 196<5 ; GB 1=C C<1; =BDK<F =3 61D<;A6 < @< F1<= CB=@
<;@1 A @ AGG<A;<@ CAI< 6 ;< B; <@ GA1 9 ;
C< GB;G = 9 FCA= 1=1 ? A G ; 1 9 C = EC CA@ L>$+
@<9< @<@ C1= C; < < CA@ G; . 1=<@ C< . A1 < A F< 9 C< 0
= 1 B 1 @;AE BG D C< ; <= 9 A@1M 1 @ A @ = B@@<@ E1 C C<
@<9<F = 9 C< ;< FC = 1 B 1 9 2! DB C< ?19 9 1 = 1 B 1 = 1
AFF ;@A F< E1 C C< < 61?C < . < 9 C< G< G6<@ A @ 9AI B;AD6< C<
GBDCF 61D<; 1<= < CA@ =FA;F<6 C E<I<;@ ;<=B . <@ C< F; E A9 <;
CAI1 ? <=FAG<@ 9; . C< G;1= 9 A6< KA @ EC< C< ;<<= AD61=C<@ C<
JB1=1 1 @ ;<1? <@ E1 C B F = 1 B 1 A6 F ; 6@ A @ D<CAI<@ 61>< A

7* 0 " 0' ' ! /' = ! - ' : 4' ' 8* - '

@<=G ' EA;@=' C< . = ' @1= 1 ?B1=C<@' . < ' 9' C1=' ?@ . , #C< A; 1 <M' @< 6A' =A=&' C< ;;< =&' A @' C< ;?B<66<= , EC .' C< <P16<@' ' C< DB; 1 ?' ; F>=' 9' 9;1FAN EC16= ' C1=' @<9< @<;=' q B @'#< . =<6 I <=' . 1P<@' BG' 1 ' C< =A . < G;1= =' E1 C' C< GA; 1=A =' 9' - 1 ?' S =<GC&' A?A1 = ' EC .' C< ' CA@' 9 B?C ' C< A; . &' @<G;1 I <@' 9' 1 =' D<= ' 991F<;=&' ;< I 6 <@&' A @' C< =6< 9' < ' EA=' C< 91;= ' =F< < 9' C< 1 =B;;<F 1 ' EC1FC' DB;= ' 9 ; C&' 1 ' SA BA; &' "&' A . ?= ' C< ; G=' 1 < @<@' ' =BD@B<& C< GA 1=C' F 6 1<=' 9' B C' . <;1FA ' A A6 1A' A; =< A6 . = ' A ' C< =A . < 1 . < A ' C< I 1F< 9' 1 AN O A61F1A' DA@' A6;<A@ ' G; F6A1 . <@' C< = 1 B 1 ' 9' C< ; <=N A @' C< 1 =B;;<F 1 ' =G;<A@' 1 ' =BFF<==1 ' ' <I<; ' F1 ' 1 A66 & BC ' @3 D1=DA6& EC ' EA=' =< ' ' 91?C ' C< ;<D<6' A; . ' 9' C< =6< 9' < & C 1= <@' C< =A . < 96A?' A=' 1 ' A ' FA A ' A@;1@' ;<F<1 I <@' C< <EA' 9' C1=' <I< ' E1 C' < CB=1A= . & A @' <;@1 A @& CA I1 ?' ' C<;' A6 <; A 1I < DB ' ' AD@1FA < ;' ' =E<A;' ' . A1 A1 ' C< = 1 B 1 & =E ;< ' . A1 A1 ' 1 ' ;?B<66<=& ;;< & A @' A; 1 <M' @< 6A' =A=' GA==<@' =B@@< 6 ' 9; .' C< G;1= =' 9' 9;1FA' ' C< B F16' CA . D<;' 9' C< . A;FC& A @' 1 AB?B;A <@' C<1;' 0 I<; . < ' D ' AD 61=C1 ?' C< JB1=1 1 ' A @' =BGG;<==1 ?' C< ;@<;' 9' S<=B1 =' 1 ' GA1 ' C< 0 I<; . < ' EA ' E1 C B ' ;<= B;F<=& A @' @<F;<<@' C< =A6< 9' C< 1 . . < =< G ==<==1 =' 9' C< . >=& C< ;<=B6 ' 9' EC1FC' EA=' CA ' =1P ' C B=A @' ;<61?1 B=' G<;= =' AF 1I <6 ' <PF1 <@' C< G GB6AF< A?A1 = '

B7<D >#

1 ' C< - - ' 9' C1=' IA= ' . I< . < ' . A@< 1 =<69' 9<6 ' 1 ' + ; B?A6 ' C1=' >1 ?@ . & =1 F< C< 961?C ' 9' C< 9A . 16 ' 9' (;A?A MA& A @' @B;1 ?' C< EA;& CA@' D<< ' =BDK<F <@' ' A ' ?61=C' <?< F & EC1FC' ? I<; <@' 1 ' A=' C B?C' 1 ' CA@' D<< ' A' F 6 ' 9' C< (;1 1=C' 1=6<=' C< + ; B?B<=<& A; B=<@' D ' A' 9<<61 ?' 9' A 1 A61 & @; I< AEA ' C< ?61=C' AB C ;1 1<=& A @' ;<FA66<@' C<1;' 6@' = I<;<1? & S C ' & EC ' 6<9 ' C< <?< F ' 9' C< (;AM16=' ' C1=' = & % ' +<@; & A @' ;< B; <@' ' ;<1? ' I<;' C1=' 6@' =BDK<F =& A ' C< G;1F< 9' AFF<G 1 ?' A' 61D<;A6' FCA; <;' @;AE ' BG' ' C< . @<6' 9' C< GA 1=C' = 1 B 1

A6 & ?; A 1 ?' B @<;' C< B= ;1A ' =F<G ;<& EA=' <JBA66 ' A?1 A <@' ' <I<; ' G ; 1 ' 9' CA ' >1 ?@ .' C<;< E<;< 9 ; . <@' = F1< 1<=' 9' ;<< . A= =' A @' A;D A;1& 61 ><@' ?< C<;' D ' C< @< <; . 1 A 1 ' = <;' ;' 6A <;' ' 9;<< C<1;' F B ; ' 9; .' 9 ;<1? ' @ . 1 A 1 & A @' ' 9 ; .' C< IA;1 B=' A <='

<>L#@>

9' C< G< 1 =B6A' 1 ' A' 9<@<;A6' <GBD61F ' C< >1 ?@ .' 9' AG6<=' EA=' 1 ' A' = A < 9' C< ?;<A <= ' <PF1 < . < ' <;@1 A @' ; ' CA@' ;<F I<;<@' 1 ' 7' C< =F<G ;< 9' CA ' F B ; & EC<;< B;A & A9 <;' C< DA 6< 9' A <;6 & CA@' D<< ' A>< ' A @' =C ' C<;<& A6= & =<F;<

= F1< 1<=' G6 <@' A' G 61 1FA6' ;<I 6B 1 (' A @' C<'=1? A6' 9 ;'1 ' AGG<A;<@' A ' C<' E ' 9' 6A ' C<' (B;D ' ;<?1 . < ' =A661<@' 9 ; C' 9; . ' C<' DA; ;AF>=' 9' CA ' E ' ' C<' @' SB6 (' "(' E1 C' 96 1 ?' < =1? =(' A @' E1 C' F;1<=' 9' [1I<' 6A' = 1 B 1 z~ E ' C<;' ;<?1 . < =' K 1 <@' 1 (' C<' A;D A;1' ?A C<;<@' 1 ' . A==<=(' A @' O< <;A6' +<G<' ;A1=<@' C<' FAG1 A6 ' ' C1=' =B 1 . =' C<' G< G6<' 1 I<= <@' C<' GA6AF<(' A @' G; F6A1 . <@' C<' = 1 B 1 ' 9' C<' GA 1=C' ; <=' <;@1 A @' ' A @' C1=' = ' A@ G <@' 1 (' A @' =E ;<' ' . A1 A1 ' 1 ' C1=' ;<I 6B 1 ' 1 ' 1F16 ' EA=' AFF . GA 1<@' D ' 9;1?C 9B6' . A==AF;<=

C16=' B; G<' CB=' DB;=' 9 ; C' 1 ';<I 6B 1 ' 1 ' C<' = B C(' C<;<' EA=' ?;<A ' A?1 A 1 '1 ' +;B==1A' A @' C<' ; C<; ' A <=' 9' O<;0 2
. A (' EC1FC' 1 ' IA1 ' AEA1 <@ ' C<' 61D<;A6' 1 = 1 B 1 =' EC1FC'
CA@' D<< ' G; . 1=<@' D ' C<1;' ;<=G<F 1I<' = I<;<1? =' ' =A 1=9AF 1 ' D<1 ?' ?;A <@' ' AF BA6' <F<==1 ' A @' 6<?1 1 . A <' @<=1;<=(' ?B16 ' GA==1 =' E<;<' A; B=<@(' A @' = 1;;<@' = F1< ' ' 1 =' @<G C=' I<; EC<;<(' 1 ' 9AF (' EC<;<' G;1 F<=' ;<9B=<@' ' C<1;' G< G6<=' G 61 1FA6' 61D<; 1<=' A @' A' A 1 A6' ;<G;<=< 0 A 1 (' F =G1;A ;=' 9 ; . <@' G6 =' A @' =<F;<' A==A==1 A 1 =' ' EA=' 1 ' C<' A . <' 9' 61D<; ' A @' <JBA61 ' CA ' C<1;' . < . D<;=' DA @<@' ?< C<;(' A @' ECA ' C< ' @< . A @<@' EA=' A' G 61 1FA6' A @' = F1A6' ;<I 6B 1 ' ' I1 6< ' @< . A? ?B1= . ' 1 96A . <@' C<' B 1I<;=1 1<=' C<' G <' - M<DB<(' C<' @<9< @<;(' 1 ' C1=' E ;1 1 ?(' 9' C<' ;1?C =' 9' . A;FC=(' 9<66' A ' C1=' G<;1 @' D< <A C' C<' @A??<;' 9' C<' B ?' CA;6<=' A @(' EC ' CA@' @1= 1 ?B1=C<@' C1 . =<69' 1 ' C<' EA;' 9' O<; . A ' 1 @<G< @< F<(' < =' 9' C B=A @=' 9' I 1F<=' < CB=1A=0 1FA66 ' ;<G<A <@' C<' A . <' 9' C<' A==A==1 (' A @' < =' 9' C B=A @=' 9' C<A; =' I E<@' ' E ;=C1G' C1=' . < . ; ' C<' ;<I 6B 1 A; ' 9<I<;' EC1FC' I<;;A ' C<' 1 < ' C;<A < <@' ?6A @' A6= (' A @' =G;<A@' ;AG1@6 '1 ' C<' A=(' EC<;<'1 ' A; B=<@' 9; . ' C<1;'6 ?' 6< CA;? ' C<'@<=F< @A =' 9' ! 7@@?>
C<' O ;<<>' C<; <=' C<;<&R A ' 6<A=(' C<' 1 =B;;<F 1 ' EA=' ;<A66 ' A' . I< . < ' 1 ' 9AI B;' 9' 9;<<@ . ' =' DK<F ' EA=' C<' @<61I<;A F<' 9' C;1= 1A ' O ;<<F<' 9; .' C<' 9 ;<1? ' ><' 9' C<' B==B6 . A =N C<' ?< 1B=' 9' 16 1A@<=' A @' C< . 1= F6<=' ;<AE ><' 1 ' 1 =' ;B1 <@' F1 1<=' A9 <;' A' =6B . D<;' 9' E ' C B=A @' <A;=(' A @' C<' F; ' 9' GA ;1 1= . ' # @' 61D<; (' =G;1 ?1 ?' 9; .' C<' EA66=' 9' B61' A @' C<' ; F>=' 9' G1;B=(' A6;<A@ 'AE ><' C<' <FC <=' 9' A;A C ' A @' A6A . 1=

+ '

)' ' ' ' ') ' * - ' ' ' ' ' ' "

!1 ' @ !' " , *1 ' 1 @ !' N

* ' + +' AD= 6B <' . A;FD=f C<' . G<; ;' 9' B= ;1Af C<' MA;f A @' C<' M@' B#K' #$$0 9' +;B==1Af CA@' =1? <@' 1 ' 7' A' ;<A ' 9A . B=' B @<; C<' A . <' 9' C<' 6 ' 661A F<f D ' EC1FC' C< ' B @<; >' ' DA=<' C<1;' . B BA6' ;<6A 1 =' ' C<' . = ' =AF;<@' G;1 F1G6<=' 9' C;1=0 1A 1 f A @' ' CA I<' ' C<;' DK<F =' 1 ' C<1;' G 61F ' DB ' C<' 1 <;<= =' 9' C<1;' =BDK<F =f C<' . A1 < A F<' 9' ;<61?1 f G<AF<f A @' KB= 1F< ' C1=' ;<A ' CA@' AGG<A;<@' A9 <;' C<' ?;<==' 9' 1< Af A @' 1 =' ;<A6' DK<F ' EA=' C<' ;<G;<==1 ' 9' C<' ;<I 6B 1 A; ' =G1;1 f EC1FC' CA@' @1=G6A <@' 1 =<69' 1 ' <I<; ' @1;<F 1 ' 1 ' A' . A <;' I<; ' C;<A < 1 ?' ' = F1A6' ;@<; ' ' @<' < <; 1FCf 1 ' C<' A . <' 9' C<' . G<; ;' 9' B= ;1Af C1=' . A= <;f F I ><@' E1 C' C1=' DK<F f A ' A;6=DA@f A' F ?;<==' A ' EC1FC' E<;<' G;<0 =< ' A66' C<' . < . D<;=' 9' C<' O<; . A 1F' 9<@<;A 1 f A @' A ' EC1FC' C<' C1 . =<69' <P<;F1=<@' A' = I<;<1? ' 1 96B< F<' C1=' F ?;<==' >' < <;?< 1F' . <A=B;<=' 9 ;' C<' @<= ;BF 1 ' 9' =<F;<' = F1< 1<=f A @' A; . <@' C<' %1<' E1 C' 9 ; . 1@AD6<' G E<;=' 9 ;' C<' <P<;F1=<' 9' A ' AF 1I<' =B;I<166A F<' A @' C<' <= AD61=C . < ' 9' ;1? ; B=' G 61F<' ;<?B6A 1 =' 1 ' C<' IA;1 B=' A <=' EC1FC' E<;<' . < . D<;=' 9' C<' O<; . A 1F' D @ f E1 C B ' ;<9<;< F<' ' C<1;' GA; 1FB6A;' F = 1 B 1 =' ' 9<E' . C=' A9 <;EA;@=' C<' = I<;<1? =' 9' B==1Af B= ;1Af A @' +;B==1A' F =B6 <@' ?< C<;' A ' ; GGAB' 1 ' 16<=1Af ' C<' . <A =' 9' = 1961 ?' C<'

B+ 7@AA' B3 ;<I 6B 1 ' 1 ' GA1 f + ; B?A6f A @' C<' >1 ?@ .' 9' AG6<=' (<1 ?' A==< . D6<@' A ' A' 6A <;' G<;1 @' A ' A' <E' ?;<==' A ' A DAFCf C< ' 1 I1 <@' C<' 6@' - 1 ?' 9' AG6<=f <;@1 A @' && ' G; 0 F<<@' C1 C<;' ' K 1 ' C< .

C16= ' C<' C;<<' A661<@' = I<;<1? =' CB=' =< ' C< . =<6I<=' 1 ' @1;<F ' GG =1 ' <?1=IA1I<

@AA$B+ ', ;<I 6B 1 A; ' =G1;1 f ;A F<' EA=' < @B;1 ?' C< B 9 ; B A <' F =<JB< F<=' 9' = . <' 9' C<' <6<F 1 =' 9' !&

A @ C 9A A6 FA A= ; GC 9 <D;BA; " @ 1FC<61<B =BGG ; <F 1 C CA . D<; C <PF<G 1 A6 6AE G;<=< <@ D %<FAM<= C 91;= 9 EC1FC =B=G< @<@ 1 @1 1@BA6 61D<; =G<A>1 ?A?A1 = C1= 6AE 0< <;A6 B <;<@ C<=< <6 JB< E ;@= , [< B= AF C =A1@ * CA C G; 91 9 A =BD61 . @<A C D< 6 = C ; A6 C B=< A @ C GBD61F . ;A61 M A @ = CA BD<; = #'F< # G = <;1 . A D< AD6< FA= BG B= C< ;<G; AFC 6 Y CA A C 9B <;A6 D=<JB1<= 9 A (B;D C 61D<; 9 C F1 1M< = EA= 1 . . 6A <@ =<; I< A= A C<FA . D 1= <9 ; = A @ C = 9 C EC 6 <9 9 C CA . D<; E<;< G E<;6<==< A @ 1 @1 1@BA6 61D<; EA= A?A1 =B=G< @<@ C =<F @ <PF<G 1 A6 6AE G;<=< <@ D C 1 1= <; ;<<= AD61=C<@ 9 ; A <A;5 C F< = ;=C1G 9 C K B; A6= <; 66A;@ 1 C F B;=< 9 C @1=FB==1 9 C1= 6AE G B;<@ 9 ; C C ?;1<9 A @ <;; ; EC1FC C 9<6 A =<<1 ? C 0 I<; . < @<GA; 9; . C F B;=< EC1FC 1 CA@ < <;<@ D C @<F;<< 9 C 7 C 9 <G < . D<; A @ ADA @ C . @<;A < 1D<;A6=9 ; C<1; GG < = < F B6@ <PG<F C1 ? (B @1= ;@<; A @ F 9B=1 9; . C1= FCA ?< 9 AF 1F= C GA; 9 C 0 I<; . < [A;FC C =A1@ [EC1FC CA@ D<< @;1I< 9; . = F1< D C B 1I<;=A66 9<6 <F<==1 9 ; ;@<; A @ ;<G =<@ CA@ _ 9 B @ ;<9B?< 1 C I<; C<A; 9 C A < =<< . <@ A= C B?C C 0 I<; . < 1? ;<@ 1 A @ CA@ F =F1 B= <== 9 1 = = ;< ? C < @ . ;1 ? E166 E<66 @<91 <@ DK<F C ; A6 = A @A;@ EC1FC C @<F;<< 9 C 7 C 9 <G < . D<; CA@ G6A <@ 1 C . 1@= 9 C A 1 =<< . <@ EA @<; AD B 1 F = A A @ B F<; A1 C<; 1 EA= =<< <= <;@A 1 F B6@ D< 9 B @ @A C . <A 1 . < C< . 1 @= 9 . < D<FA . < @<=G @1 ? ; 1;;1 A <@ A @ 9166<@ E1 C ?6 . G;<=< 10 . < = 3 1;;<G;<==1D6< A P1< GG;<==<@ C< . C16= = 166 9B66 9 619< C< F1 1M< = 9 ;A F< E<; < G;<=< A= 1 E<;< A C<1; E D=<JB1<= E1 C B G E<; ; F B;A?< 1 <;;BG C< . A @ 1 . < EA= 96 E1 ? A @ <AFC @A EA= @<I B;1 ? C< . C< 6AE EA= A@ G <@ A @ C< @1=FB==1 ;<=G<F 1 ?1 EA= =BFF<<@<@ D = 166 . ; < A ?; @<DA <= C< <E <6<F ;A6 6AE

C1= 6A= 6AE EA= 1 9AF 9 @<F1=1I< 1 . G ; A F< C< @<= 1 1<= 9 C< <= ;A 1 M 9 ; 1 EA= <I 1@< CA 1 = ;<=B6 E B6@ D< @<G;1I< C< . 1@@6< A @ 1 @B= ;1A6 F6A==<= 9 A6 . = A66 C<1; #@?<B7>## >S G 61 1FA6 1 96B< F< C< G; 91 9 C ?;<A 6A @<@ G; G;1< ;= @< 1FC<61<B A @ C1= F 66<A?B<= 96A <;<@ C< . =<6I<= CA D =BGG ; 1 ? 1

< ' =<FB;<@' C<' G;<G @<;A F<' 9' C<' 1?C ' < ;<' ;' A61=' GA; ' EC1FC' C< ' E' ;<61<@'ℕ DB ' <I< BA66 ' 1 ' EA=' =<< ' CA ' A66' C<' 1 96B< F<' 6 = ' D ' C<' <9 ' =G<<@16 ' GA==<@' 9; .' C<' 1?C ' < ;<' ' C<' <P ;< . <' 1?C ' ;' F 11 <; ;<I 6B 1 A; ' A @' 6 ;A A61= ' GA; ' EC1FC' EA=' ' 6<==' @A ?<; B=' ' C<' ; E ' CA ' C<' 6 ;A 1D<;A6' GA; ' C<' G; K<F '@;AE ' BG' D ' ' <; ;<' EC1FC' EA=' A9661F <@' D ' A ' 1 FB;AD6<' @1=<A=<' EA=' ?;<A 6 ' . @191<@' D ' A' F . . 1 <<' 9' C<' <6<F 1I<' CA . D<;' A @' = 166' . ;<' = ' D ' C<' CA . D<;' 1 =<69 ' C<' 6AE' A=' 1 ' EA=' A@ G <@' ;A1=<@' C<' B . D<;' 9' @<GB 1<=' ' 9 1B}'5CB @;<@' A @' C1; ' 9' EC1FC' E ' CB @;<@' A @' 919 ' <1?C ' E<;<' ' D<' . 1 A <@' D ' C<' @1= ;1F ' F 66<?<=&'F =1= 1 ?' 9' <6<F @;=' GA 1 ?' AP<=' ' C<' A . B ' 9' C;<<' CB @;<@' 9;A F=' ℕ EC16= ' A' CB @;<@' A @' =<I< E ' E<;<' ' D<' <6<F <@' D ' C<' F 66<?<=' 9' @<GA; . < =' EC1FC' E<;<' ' F =1= ' 9' A' 9 B; C' GA; ' 9' C<' . = ' C<A I 16 AP<@' <6<F ;=' 9' C<' @<GA; . < ' C<' 6A <;' I <@' 1 ' C<' E ' F 66<?<=' A @' CB=' G ==<==<@' A' G;1I 16<?<' I<;' C<' C<;=' EC1FC' EA=' F =1@<;<@' A=' A' @<I 1A 1 ' 9; .' C<' FCA; <;'ℕ A @' EC1FC' FAB=<@' C1=' <E' <6<F ;A6' 6AE' ';<F<1I<' C<' B G GB6A;' A . <' 9' C<' 6AE' 9' C<' @ BD6<' I <' ' EA=' <6 JB< 6 ' @<9< @<@' D ' C<' 1 1= ; ' A @' C<' . = ' < . 1 < ' . < . D<;=' 9' C<' 1?C ' A @' 1?C < ;<' ' @<' 166]6<' @<' 6A' (B @ A <' A1 W' F' 66' C<

<B7 ; ℜ C$AB$$A I A$B+A' (1 K= $+' >7$A '

9AF 1 =' 1 ' EC1FC' C<' ¸ 1D<;A6' GA; ' EA=' @1I 1@<@' B 1 <@' 9 ;' C<' GB;G =<' 9' GG =1 ?' I ' A @' E<;<' ;<G;<=< <@' A ' C< ;1DB <' D ' 0< <;A6' ' (< KA . 1 ' = A ' _ A=1 . 1;' +<;1<;' <; 66A;@' A . 166<' S ;@A ' A9A < <' A @' A B<6' %1 . 1 ?' C<' C;<< E<<>=' FFBG1<@' D ' C1=' . < . ;AD6<' @<DA <' C<' CA . D<;' EA=' A' 91<6@' 9 DA 6<' 1 ' EC1FC' C]' GG =<@' GA; 1<=' 9 B?C ' E1 C' <AFC' C<;' ' C<' @<A C C<' <PF1 < . < ' 9' C<=<' @<DA <=' =G;<A@' D< @' C<' EA66=' 9' C< CA . D<;'ℕ A @' I1 6< ' F 961F =' >' G6AF<' D< E<< ' C<' ; G=' A @' C< GBG16=' 9' C<' =FC 6=' EC ' E<;<' =BGG ; <@' D ' A' G ; 1 ' 9' C<' +A;1=1A G GB6AF<' C<' 6AE' EA=' <I< BA66 ' GA==<@' D ' A' = . A66' . AK ;1 ' 1 ' C< . 1@=' 9' =A ?B1 A; ' ' A @' C<' =<==1 ' EA=' F6 =<@' ' C<' @' 9 SB6

C<' = ; . ' @<DA <=' ' C<' <6<F ;A6' 6AE' FAB=<@' A' . =' @1=A= ; B=' 9<<61 ?' 9' <PF1 < . < ' 6 . B?C B ' C<' EC 6<' 9' ;A F<' C<' 1D<;A6' GA; ' 9 1 . @' 1 =<69' @1=A; . <@' D ' 1 ' A @' AGG<A;<@' ' D<61<I<' CA ' A66' C<' 9;B1 =' 9' C<' <I 6B 1 ' E<;<' C;<A < <@' E1 C' @<= ;BF 1 ' ' 6 = ' A66' C G<' 9' D A1 1 ?' A ' G;<G @<;A F<' 1 ' C<' A < D ' 6<?A6' . < C @=' A @' A=' ' 9;<JB< 6 ' CAGG< =#1 ' C<' FA=<' 9' C =<' EC ' @<=GA1;' 9' D A1 1 ?

* ' R - 5' > ! #' : 4' $ ' 8 * '

A ' C< F @BF ' 9' C< . @<;A < . 1 1= <;=& A @' EC & A9 <;' CA I1 ?' A>< ' GA; ' 1 ' C< F . G16A 1 ' 9' C< @<F;<< 9' C< 7' C' 9' <G < . D<;& CA@& D ' . <A =' 9' C< <6<F ;A6' 6AE& GA I<@' C< EA ' 9 ;' C< I1F ; ' 9' C< GA; ' A?A1 = ' EC1FC' CA ' @<F;<< CA@' D<< ' @1;<F <@ ' (B ' A6 C B?C' @<G;1I<@' 9' C<' 9 ' E<;' ?1I< ' D ' B . D<;=' C< @<GB 1<=' 9' C< <9 ' G ==<==<@& C< = ;< ? C' EC1FC' 1=' ?1I< ' D ' GA==1 ' EC< ' B 1 <@' E1 C' A6< ' C< ' B . D<;<@' A . ?= ' C< . ' . < ' @<I <@' ' Q C< G;1 F1G6<=' 9&' 2 !& EC1FC' C< ' <6 JB< 6 ' @<9< @<@ ' 66' C< 9AF 1 =' 9' C< 1D<;A6' GA; & 9; .' C< % F ;1 A1;<=' ' C< 1;;<F F16AD6< < < . 1<=' 9' C< (B;D =& E<;< ;<G;<0 =< <@' A . ?= ' C< . ' D ' C<1;' 6<A@<;= ' GG =1 < ' C< . ' E<;< F 0 9 B @<@& B @<;' C< A . < 9' A61= =& C< . < ' A AFC<@' ' C< 6<?1 1 . A < . A;FC ' A=' 1 ' CA@' D<< ' . A@<' D ' C< FCA; <;& A @' C< . BFC' 6A;?<;' B . D<;' EC & 6 >1 ?' BG ' C< FCA; <;' A=' A ' B 9 ; B A < 6<?AF ' 9' C< <I 6B 1 & C G<@& A=' C< ' F B6@' ' @<= ; ' 1 & A ' 6<A= ' ' D< AD6< ?;<A 6 ' ' . @19 & D ' C< A1@' 9' 9;<=C' 6AE=& C< <99<F =' 9' 1 =' G;1 F1GA6' F6AB=<=

' 1;' 1 . G ==1D6< 9 ;' B=' ' B @<;= A @' C< @19 (FB6 1<=' 9' C< =1 BA 1 & A @'

>7<R' >+$; BA$<KF

C< 1 . G ==1D161 ' 9' G; FB;1 ?' C< AFF<G A F< 9' A' ;<A= AD6< A @' . @<;A <" G 61F & 19' E< @ ' ' ;A =G ; ' B;=<6I <=' 1 ' 1 . A?1 A 1 ' ' C< . 1@=' 9' C1=' = ; . ' G<;1 @& A @' 19' E< @ ' ' ;< . < . 0 D<;' CA ' C< G1 1 =' 9' C< 1 . . < =< . AK ;1 ' 9' . < ' A;< 9 ; . <@' D ' C<1;' ;<F 66<F 1 =& C<1;' CAD1 =& C<1;' G;1I A < 1 <;<= =& A @' C<1;' GA==1 =' C< EC 6< 9' C< ?< <;A 1 ' EC1FC' CA@' D<< ' 1 ' <P1= < F< A ' C< F6 =< 9' C< 6A= ' F< B; ' EA=' ' < ' 1 ' C< . D' A ' 9' C =< EC ' CA@' 6 = ' <I<; C1 ?' D ' C< <I 6B 1 ' E<;< E' GG =<@' 9AF< ' 9AF< ' C =< EC ' CA@' ?A1 <@' <I<; C1 ?' D ' 1 & A @' 9 ;' C<=< E ' F6A==<=' 9' . < ' 1@<A=' CA@' A' I A= 6 ' @199<;< ' . @< 9' <PG;<==1 & A @' E ;@=' C< . =<6I <=& <I< & CA@' A' @199<;< ' . <A 1 ?' C< 9 ; . <;' =AE' 1 ' <I<; ' @<61D<;A 1I< A==< . D6 ' A' A 1 A6' I< 1 & 1 ' <I<; ' 1D<;A6' A' SAF D1 & A @' 1 ' C< FCA; <;' C< E;1 < ' A @' @1 B=' =A F 1 ' 9' C< B ;A?<=' 9' EC1FC' C< ' CA@' D<< ' C< I1F 1 . =' ' C< < <=' 9' C< 6A <;' C< (B;D =' E<;< DB ' C< ;<G;<0 =< A 1I<=' 9' A' @< <= AD6< = = < . ' 9' ? I<; . < & A @' C< 6@' < . 1?;A ' ; A61= =& C< < < . 1<=' 9' +;A F<& . < ' EC =< 1 96B< F< F @@' ' DB ' D< C< = B;F< 9' F 1 BA6' @A ?<; ' C< I<; ' =A . < AF 1 =' E<;< 6AB@<@& ;' D;A @<@' A=' 1 9A . B=& AFF ;@1 ?' A=' C< ' E<;< AFF . G61=C<@' B @<;' C< EC1 < 96A?' ;' C< ;1F 6 B;N A @' ;<61?1 & 1 I ><@' D ' C< < GA; ' A=' A' . A1 ' =BGG ; ' 9' C<1;' FAB=<& EA=' CA <@' D ' C< C<;' A=' C< 1 =<GA;AD6< ABP161A; ' 9' G;1I16<?<=' A @' AD= 6B 1= . ' C< 9 ; . <;' F6 =<@' C<1;' < <='

" C< <F<==1 1<= 9 C< G;<=< ' 1 . <=& A @ C< 6A <;' F B6@ ' F . G;<C< @ C< <AFC1 ?= 9 C< GA= & ;' C< 1 96B< F< 9 ;A@1 1 ' ' G 61 1FA6 A @ = F1A6 ;@<;' AFC GA; ' EA= <JBA66 '1 =G1;<@ D ' D61 @ CA ;<@& 9B; & A @ 166B=1 =& = ' . BFC C< . ;< G; 9 B @& D<FAB=< <1 C<;' GA; ' F B6@ G<;F<1I< C< @A ?<; B= F =<JB< F<= EC1FC . B= ' ;<=B6 '9; .' C< ;<A610 MA 1 ' 9 C<1;' <P ;< . < A @ GG =1 < I1<E=

CA ' F B6@ D< @ <& 1 ' =BFC A = A < 9 C1 ?=& D ' C< BG;1?C & <P0 G<;1< F<@& A @ E1=< . < 'EC ' =A '1 ' C< AD1 < & C< 1FC<61<B=& +A=JB1<;=& A @ <;;<=& 1 F<==A 6 'D<A < ' A= C< ' E<;< D ' C< EAI<= 9 F 961F 1 ?' GA==1 =& A @ A6 . = ' <JBA66 ' CA <@ D ' C< 6 ;A A61= ' A @ 6 ;A ' 1D<;A6 GA; 1<=& <AFC 9 EC .' ;<?A;@<@ A= A F;1 . < A 'F F<==1 ' ?;A <@ ' C< C<;' C< C;<< 1 1= <;= EC ' E<;< . < . D<;= 9 C< 1?C & A @ IC .' ' @< 1FC<61<B CA@ A@ . 1 <@ ' C< B F16 A ' C< F6 =< 9 C< 6A < <6<F 1 =& A @ <=G<F1A66 ' ' @< 166]6< A @ ;D1];<& ;< . A1 <@ 1 . . IAD6< A @ =16< ' 1 ' C< . 1@= ' 9 C< . = ' 1;;1 A 1 ?' @<DA <=& A @ = = < . A 1FA66 ' ;<9;A1 <@ 9; .' ?1I1 ?' A ' =BGG ;' ' C< 1 1= ; & EC1FC CA@ = 61F1 <@ C<1;' A1@& DB ' EA= ' =B991F1< 6 '1 ' AFF ;@A F< I1 C ^1<1;' ?< B1 < G1 1 =' %B;1 ?' C< G;<I1 B= =<==1 & A @ C< 91;= ' . C= 9 C< <E =<==1 'a " b& C E<I<;& C< ; BD6<@ = A < 9 . A ' G ;0 1 = 9 B; G< D ;@<;1 ?' ' ;A F<& EC<;< C< FAB=< 9 C< 9 ;<1? ' ;<I 6B 1 1= = ;<F<1I<@ C< @<<G<= ' = . GA C & EA= A =A6B A; 'FC<F> ' C< 6 ;A A61= = ' C< =G1;1 ' 9 1 = . ;<F 1 ' . 1?C ' ;1B . GC 1 ' GA1 & A ' AG6<=& A @ 1 ' +1<@ . & A @ C< ' FAB=< A ' <PG6 =1 '1 ' ;A F<& A @ C< 1?C ' 9 C< 6<F 1I< CA . D<;' @1@ ' A= < ' I< B;< ' ;<A ' A= < 1;<6 ' IA JB1=C<@ C< <I 6B 1 & E1 C EC1FC 1 ' EA= G ==1D6< CA ' C< ' . 1?C ' CAI< '@<A6 ' C< . ;; E' (B '1 ' C< =G;1 ?' 9 & EC< ' A66 C< 1 =B;;<F 1 = 9 C< G GB6A 1 = 9 A6 ' E<;< F;B=C<@& A @ C< B= ;1A =& A9 <;' A ' <A= ' ;1B . GC& E<;< . A= <;= 9 C< EC 6< +< 1 =B6A& C< A61= ' GA; '1 ' ;A F< ;<?A;@<@ 1 =<69 A= I1F ;1 B= A6 ?' E1 C C< . & A @ C< . AK ;1 ' 1 ' C< CA . D<;' 9 %<GB 1<= A?A1 ' G< 6 ' @1=G6A <@ C< A;@< 'GA==1 = EC1FC CA@ A 1 . A <@ C< CA . D<;' 9 |7

C< <E 1 < 1 = 9 C< A61= ' GA; ' . A 19<= <@ 6<?1=6A 1I< C< . =<6I<= 1 ' A & & @B;1 ?' C< @<DA < 'A G; G =<@ 6AE& EC1FC EA= < 9 C< ?;<A ' <I< = 9 C< =<==1 & A @ C< 6 ' DK<F ' 9 EC1FC EA= ' AGG6 ' C< A . B ' 9 <P 1 F ' <FF6<=1A= 1FA6 G< =1 = ' C< < @ E . < ' 9 E<6I< <E D1=C G;1F=& C< CBS ; @D<I3B7Y<M@ 1 . G; I< . < ' 9 I1FA;A?<= A @ FB;AF1<=& A @ C< ;<GA1;' 9

FCB;FC<=' C1='G; K<F A6 C B?C@1F A <@'D ' C<' . ='D< <I 6< '1 < 0 1 ='QE1C';<=G<F' ' C<'1 <;<= =' 9';<61?1 EA=' <I<; C<6<=='I1 6< 6 ' GG =<@'D ' C<' . < . D<;=' 9' C<' 1?C A='1 =B1 F1< ' A @' ';<= ;1F 1I<' 9' C<';1?C =' ' C<'FC 1;FC'A @' C<' . A;FC' C<=<' @<GB 1<='1 ' 9AF FC<;1=C<@'A'=<F;<'C G<' 9' D A1 1 ?' C<'<P<FB 1 ' 9' C<'F F ;@A'F 0 F6B@<@'1 ' 2' D< E<< ' C<' 6 ' <<' A @' ;A F<' DB'EC1FC'CA@' ' D<F . <'A'6AE' 9' C<' A <' C<' GG =1 1 ' A < . G <@' C; B?C' C<'61G=' 9' '@<' (A6@' C<' =G<A><;' 9' C<'F . . 1 <<' ' F . G6< <6 ' FCA ?<' C<' FCA;AF <;' 9' C<' . 1 1= <;1A6' G6A ' DB' C<' <6 JB< ' <99 ; =' 9' ' +A=JB1<;' =BFF<<@<@'1 'G;<=<;I1 ?' 1 =' G;1 F1GA6' F6AB=<=' C<' B . D<;' 9' <E' D1=C G;1F=' EC1FC' C<'0 I<; . < 'CA@'G; G =<@'=C B6@'D<' E<6I<' EA=' 1 ' G;1 F1G6<' ;A1=<@' ' C1; ' A @' C<' FC 1F<' 9' C<' G6AF<='EC<;<' C<=<' =<<=' =C B6@'D<'9 1 . @<@'EA='6<9 ' ' C<' - 1 ?' C<' G; G =<@'6AE' A=' CB=' . @191<@'D ' C<' CA . D<;' 9' %<GB 1<=' EA=' A@ G <@'D ' CA ' 9' C<' +<<;=' A @' C<'F @1 1 ' 9' C<'F6<;? 'EA=' C< ' . A@<'G;< ' . BFC' ECA ' 1 ';< . A1 =' A ' C<'G;<=< '@A

C<' A61= ' GG =1 1 ' 1 ' C<' 6<F 1I<' CA . D<;' DB;='9 ; C'1 ' C<' . ='9B;1 B=' . A <;' ' C<' FFA=1 ' 9' C<' G; G =A6' 9' A' 6AE';<6A 1I<' ' C<'C<;<@1 A; '?;A ='D<= E<@'D ' C<' . G<;1A6' 0 I<; '

>SB+<J@ 7>+<>'
B3'<M@' ;L@7$>#
! BG@7>;B <

. < ' A=' ;<EA;@=' 6 ;' ?6 ;I B=' . A; ' A @'F1I16'=<;I1F<='

C<=<'?;A ='CA@'D<< '=<FB;<@' ' C<'G; G<; ' 3=' ['<P ;A ;@1 A; '@ . A1 &' A @' C<';< . A1 =' 9'EC1FC' IA6B<@'A9 <;' C<'G<AF<' 9' 'A'9 B;' . 1661 =' 9' [';< <=&' CA@'D<< '1 F ;G ;A <@'E1 C' C<' A <'G; G<; 'D 'A'91 A F1A6' 6AE' 9' ' C<' A <'CA@' CB='D<F . <' C<'@<D ;' A6 C B?C'1 'A'I<; ' @1 . 1 1=C<@'G; G ; 1 &Y' 9' A66' C =<' ' EC . ' ?;A ='CA@'D<< 'D<= E<@' B @<;' C<' . G1;<' C<' 6AE' G; G =<@'D ' 61<' 0 I<; . < ' 1 ' A;FC' ' ?;A <@';< <='1 =F;1D<@' ' C<'?;<A'D >' 9' C<'GBD F'@<D' 'A66' C<' =B;I1I1 ?' ?;A <<=' @1I1@<@'1 ' =1P' F6A==<='N C =<' F . 1 ?' B @<;' C<' 91;=' F6A==' ';<F<1I<'A' C B=A @' 9;A F=' 9' ;< <' A @' C =<' 9' C<' 6A <;' A' CB @;<@' C1='G; G =<@'6AE' EA='A 'AF ' 9' ;<GA;A 1 ' EC1FC' ?AI<' = . <' =61?C ' ;<F . G< =<' 9 ;' < ; . B='6 ==<=' A @' 99<;<@' = . <' =61?C ' A66<I1A 1 ' ' ?;<A ' =B99<;1 ?=' <=G<F1A66 '1 ' C<' FA=<' 9'A' . B6 1 B@<' 9'G ;'1 IA61@<@' = 6@1<;=' E1@ E=' A @' ;GCA =' C<' 1?C ' 9' C<' CA . D<;'

A<B7 ;]'C@J><@

C E<I<;' I<C< . < 6 ' GG =<@' 1' A @' @< . A @<@' CA ' C<

4 I' M@' i@N<7>B7C$+>7K' CB ; >$+' O' L7BCD?@C ' J@3B7@' <M@'L@>?@'B36 >7$A ' 3B7<K' ; $##$B+A' B3' 7@+<@A

= 6@1<;= 9 @W3= A; . C < @<A = A @ C C BA =C B6@ D< A66 E<@ A= E<66 A= C< 6@?;A <<= 9 C< . G1;< ' D<F . =CA;<;= 1 ' ECA ';< . A1 <@ 9 C< . G<;1A6 ['<P ;A ;@1 A; '@ . A1 ' C<F B;=< 9 C< @<DA < C< . = ' B ;A?< B= <PG;<==1 = E<;< . A@< B=< 9 ' <1 C<;' =1@< 9 C< CA . D<;' C< . 1?;A = A @ < @<A ' C<; <= ' C< < =1@< A @ C<?6 ;1 B= I< <;A = 9 C< <I 6B 1 'A @ C< . G1;< ' C< C<; E<;< A6 <; A <6 ' = 1? . A 1M<@ A= ;A1 ;= A @ ;<D<6=' ' EA= A ' B 9 ; B A < G<;1 @ 1 ' 9AF 1 ' EC1FC C< @ . 1 A ' GA; ' ;<?A;@<@ GA ;1 1= . ' A= ;<A= ' A?A1 = ' C< = I<;<1? ' 0< <;A6 ' <6 JB< 6 ' ;<G61<@ ' C< D1 <;' 1 I<F 1I<= 9 C< 6 ;A A61= = A @ <AFC 9 C1= E ;@= 9 B @ A ' <FC '1 ' <E ;A F<

C< 1 1= ; D6A . <@ A @ 1 =B6 <@ <I< ' D ' D C GA; 1<= EA= B AD6< ' G;<=<; I< ' C< <E 6AE 1 = ;1?1 A6 FCA;AF <; A @ A= GA==<@ 1 ' ;<F ?0 1=<@ C< G ==<==1 ' 9 ' AD= 6B < ;1?C = D ' C< ?;A <<= A @ 6 ' D<= E<@ 619< G< =1 = ' C =< A @ C< FC16@;< ' 9 C =< EC ' E<;< = 166 61I1 ?' EC16= ' 1 ' A6= "<JBA66 ' ;<EA;@<@ B ' 9 ECA ' ;< . A1 <@ 9 C< . 0 G<;1A6 @ . A1 ' C< =<; I1F<= ;< @<;<@ D ' C< A; . 1<= 9 C< < @<A = A @ CA ' 9 @W' C<=< I1 6< '@<DA <= E<;< D; B?C ' ' A F6 =< A ' C< . . < ' EC< ' C< ;1A6 9 C< G<;= = F F<; <@ 1 ' C< F ' P;1=1A 1K @? =G1;AF6<= 9 C< " C 9 B?B= ' EA= AD B ' ' F . . < F< 1 ' S# ;A ;HYAB Q C< B; ' 9 +<<;= ' C< 6A <;' ;<F> <@ A . ?= ' 1 = . < . D<;= . A ' 9 C< . = ' 166B= ;1 B= . < ' 9 C< . G1;< ' ' 6A;?< G ;0 1 ' 9 1 = . < . D<;= D1 <;6 ';<=< <@ C< 1 =B6 = EC1FC CA@ D<< ' C<AG<@ ' C< 6@ A; . ' 1 ' C< C<;' CA . D<; A @ E<;< CB= 1 F61 <@ G<;CAG= ' 6 >' 6<==' CA;=C6 ' ' C< . 161 A; ' F =G1;A ;= D; B?C ' D<9 ;< C< . ' 9 ;' KB@? . < ' = ' 9 C< F =G1;A ;= E<;< AFJB1 <@ A @ C< 1 @B6?< ' < @< F1<= 9 C< KB@?<= @1=G6A <@ 1 ' C< =< < F<= GA==<@ ' C = EC ' _II<;< 9 B @ ?B16 < 9 EC . ' 6 ' AG A1 ' A 16 EC ' CA@ 96<@ EA= F @< . <@ '@<A C ' C< CA . D<;' 9 +<<;= C E<I<;< CA@ AFF<G <@ C< 6AE= GA==<@ D ' CA ' 9 C< %<GB 1<= EC16= ' <I<; C<6<==' @1=G6A 1 ?' A' ?;<A ' @<=1;< ' = ;B??6< A?A1 = ' C< < F; AFC . < = 9 C< 6 ;A A61= = ' C1= ?<; . ' 9 ;<=1= A F< EA= @<I<6 G<@ A ' A 6A <;' G<;1 @ EC< ' C< 6A <;' CA@ D<F . < G ==<==<@ 9 61< =BG;< . < G E<; A @ C< CA . D<;' 9 +<<;= D<FA . < C< 9 FB= 9 A =<;1 B= A @ G GB6A;' GG =1 1

C< ;<I 6B 1 A; ' =G1;1 EC1FC CA@ DB ' ;<F< 6 ' E ; ' = ' =<;1 B= A ' A=G<F ' C; B?C B ' B; G< EA= E' <I<; EC<;< F;B=C<@ ' = CA= A6;<A@ ' D<< ' = A <@ 1 ' CA@ CA@ ' =BFFB . D 1 ' <I<; ' G ; 1 ' 9 C< A61A

=1P <A;= AG 6< CA@ D<< =< C ?;A D A 61I<; F . G6A1 C]G; ?;<== 9 EC1FC CA@ D<< AFF<6<;A <@ D A B C<A6 C F61 . A <@ D C F;B<6 9 C1= ?A 6<;@ 1;'_ B@= E<@ C ? I<; ; 9 C 1=6A @@ A @@ . ;< <=G<F1A66 D C @<I B;1 ? AF 1I1 9 A ?< 1 . = EC1FC@ A9 <; CAI1 ? CA@ C EC 6< E ;6@ 9 ; 1 = =GC<;< 9 AF 1 @ F B6@ E 6 9<<@ D1 <;;<?;< = C <;<<= AD61=C . < 9 ;@<;1 ;A F<@ A @ C ?;<A F;<A 1 = 9 AG 6< @ A;< C1= D<= 1 6<= ;< E @ A6 C B?C C1= . A;0 I<66 B= I1F ;1<= CAI< FA;;1<@ C ?6 ;1<= 9 C ;< FC A; . = C C1?C<= G 1 C< CAI< <I<;' A A1 <@ (B C1= P . D B @<@ A . D1 1 D; B?C ?;<A @1=A= <;= C F B ; EC1FC C<'CA@ =AI<@ D C1= E1=@ . @ A @ E1F< 6A1@ 1 G< C 1 ; A@= 9 9 ;<1? A; . 1<= C FA6A . 1 1<= EC1FC 9 66 E<@ C<=< 1 IA=1 =@ A @ C< D6 @ 9 I . 1661 = 9 . < =G16 @B;1 ? C1= ;<1? 1 1 B . <;AD6< DA 6<=@ =C E A ECA G;1F< A I1F ;' AFJB1;<= C1= ?6 ; BFC EA= C< G;<= 1?< A AFC1 ? C1= E @<;9B6 . A @ CA EC< <1?C << CB @;<@ 6<A?B<= @1= A 9; . B; G<@ C< = 166 9166<@ 1 E1 C C1= A . <@ EC16= C1= . 1?C 1 . A?< =<< 9; . A9A;' 1 = = 61 A; ; F> 1 C< . 1@= 9 C< F<A @ EA= A G<;G< BA6 DK<F 9 <;; ;' 9 ;' = . <@ A @ 9 C G< 9 ;' C<;= 1= @<A C CB;;1<@ . A 9 C< 6A <;' 1 FB6GAD6< A @ @<=G<;A < < <;G;1=<=@ EC16= D @<61I<;1 ? C<1;' A@I<;0 =A;1<= 9; . A =A6B A; 9<A;@ 1 A66 E<@ C< . ADA @ C< . =<6I<= E1 C 6<== ;<=<;I< 1 . G;B@< ;' ;A=C ;<AF 1 A; G; K<F = C< =A . < 1 . < A =<F;< G E<;' 1 IA@<@ C< F B; @ C< CA . D<;=@ A @ A66 C< D;A FC<= 9 C< GBD61F A@ . 1 1= ;A 1 %B;1 ? C< ;1?1 9 C< 6A= < <A;= . < 9 =1 F<;< G1< @ =BFC A= C< 1=F B @< ?;<?A 1 . ;< F A @ C< DDW <?;1= %B I A6@ CA@ 9 ; . <@ 1 ;A F< A 1 96B< 1A6 = F1< @ EC1FC EA= ?< <;A66 A . <@ [C< ?;<?A 1 `' C< DK<F 9 EC1FC@ A 91;= @ EA= =1 . G6 C< G<;9 ; . A F< 9 ? @ E ;>= A @ C< @B 1<= G;<=F;1D<@ D A 9<;I< =G1;1 9 @<I 1 CA@ A99161A <@ 1 =<69 C< S<=B1 =N A @ C< 6A <;@ EC E<;< G<; . 1 <@' ;<=1@< 1 + ;A F< A= . < . D<;= 9 C< ;@<;@ CA@ 9 B @<@ . A ;<61 S<=B1 = ?1 B= C B=<= C<;< B @<;' C< A . < 9 [A C<;= 9 C< A1 C ` C< CA@ G E<;9B6 =BGG ; <;= A . # 61< . < . D<;= 9 C< - A6 A . 16 1 =<69@ A @ B1= : CAI1 ? D<< <A; <= 6 < ;<A <@ 1 C<1;' D<CA69@ F =< <@ 6<;A < C< . @ E1 61 B @ C EGI#;# ;ZGG?GfA1 ? C<1;' 6<?A6 <P1= < F< C< ?;<?A 1 @ DZK ? xK9ADB<# C< # G;< E1 C C< . = <AF 1 A; G;1 F1G6<= @ D<FA . <@ #@G ;' C< GA ; A?< G9 @< + 61? AF A @ @< - 1 1<;<K # EFA 9 # 11@AD6 D= AF6< C< H

, 0, / T ') "!

G;<==' C<' <P ;< . <' A61= =(' EC =<' <E' DK<F ' EA=' ' I<; C; E' C<' AD1 < (' A99<F <@' A ' A;@< ' 6 I<' 9 ;' C<' 61D<; ' EC1FC' C< ' E1=C<@' ' ;<= ;1F (' A @' A' C ;; ;' 9' C<' F< = ;=C1G(' ?;<A 6 ' ;<=< . D61 ?' 1 ' C1=' A' F<; A1 ' B . D<;' 9' C<1;' F 66<A?B<=' 9' C<' <9 (' EC (' A9 <;' CA I1 ?' D<< ' DB ' ;<F< 6 ' C<' CB . D6<' =<; I1 ;=' 9'1 . G<;1A6' @<=G 1= . (' @1=?B1=<@' C< . =<6I<=' A=' FCA . G1 =' 9' C<' GBD61F' 61D<; 1<=' '9;<=C' I <' 9' C<' CA . D<;' ;< 0 @<;<@' C<' ;<=1? A 1 ' 9' C<' O I<; . < '1 @1=G< =AD6<' ' @<' 1FC<61<B' =B; ;< @<;<@' C1=' G ; 9 61 ' 1 ' C<' CA @= 9' C<' - 1 ?N' C1= F 66<A?B<=' 9 66 E<@' C1=' <PA . G6<(' A @' >' <E' AD1 <' EA=' 9 ; . <@' 1 ' %<F< . D<;((' D ' C<' <PF6B=1I<' 1 96B< F<' 9' C<' <P ;< . <' 1?C ' C<' =BG;< . <' G E<;' CB=' ;< B; <@' ' C<' CA @=' 9' C<' 6 ;A A61= =(' A @' F = 1 B 1 A6' ;A F<' < <;<@' BG ' A' <E' F;1=1=' 9; . ' EC1FC' =C<' EA=' @<= 1 <@' 6 ' ' 1==B<' EC<' ' C<' C; <' =61 B6@' CA I<' D<< ' I<; B; <@' BG ' C<' FCA; <;' ; ' '=C;<@= C<' . =' 1 96B< 1A6' . < . D<;=' 9' C<' <E' AD1 <' E<;<' '@<' +< 0 ; < (' C<' - <<G<;' 9' C<' <A6=(' '@<' 166]6<(' 1 1= <;' 9' B1 ;A A61=' 1 A F<(' A @' ' @<' ;D1];<(' 1 1= <;' 9' C<' <;1 ;' 1 1= ; ' 1=F B ' A C1<B' @<' . ;< F ' D A1 <@' C<' G ; 9 61 ' 9 ;' ;<1? ' 99A1;=(' A @' C<' %B><' @<' (< B ' CA ' 9 ;' A; ' '@<' 166]6<' A6;<A@ ' G ==<==<@' ?;<A ' 1 96B< F<' 1 ' C<' B F16(' A @') ' C@ $#) @ EA=' '6 ?' D<9 ;<' C<' D<FA . <' 1 =' C<A@' 1=' ;1=<' CA@' D<< ' ;AG1@(' A @' C<' B 1 <@' ' ;< . A;>AD6<' A6< =' A' ?;<A ' > E6<@?<' 9' GBD61F' A99A1;=' N' DB ' C<' CA@' '= ;< ? C' =B991F1< ' ' FC<F>' 61<' 911; ' 9' C =<' EC =<' D61 @ <==' C<' @<G6 ;<@' ' <' A < . G <@' ' = ;B??6<' A?A1 =' C< . ' 1 ' IA1 (' A @' EA=' CB; ;1<@' AEA ' D ' C<' @A ?<; B=' GA==1 =' EC1FC' C<' @1@' ' =CA;<' C<' ?;<?A 1 (' =A 1=91<@' CA ' 1 ' E B6@' D<' AD6<' ' F ; 6' C1 . ' 1 ' =G1 <' 9' C1 . =<69(' A1@<@' C1 . ' ' G E<;(' E1 C' C<' 1 < 1 ' 9' <P<;F1=1 ?' 1 ' 1 =<69 ' C<' AGG 1 . < ' 9' C<' G1 B=' 1=F B ' @<' . ;< F ' A=' <' 9' C<' 1 1= <;=' ?AI<' 1 ' A' G6AF<' 1 ' C<' I<; ' D = . ' 9' C<' AD1 < (' A @' 1 =' . < . Y D<;=' D A1 <@' C<' G;1 F1GA6' < . G6 . < =' A @' 991F<=' B @<;' <I<; ' 3 1= ; ' C< F<9 ; C' C<' O I<; . < ' A @' C<' CA . D<;' 9' %<GB 1<=' 9 66 E<@' 9 A 1 . B=6 'A' ;<AF 1 A; 'F B ;=<' '1=' 'G; DAD6<' CA ' C< ' G; G =<@' ' C< . =<6I<=' 'G; I ><A' F B <;';<I 6B 1 (' A @' '=BGG;<==' 61<' F = 1 B 1 'N DB ' C<1;' 9A A6' G 61F ' < @<@' '61 . 1 (' '=AG(' A @(' 'A' F<; A1 ' <P < ' ' A B6(' . o?' 9' C<'?BA;A <<=' ?1I< ' D ' C<' FCA; <;' ' C<' GBD61F' 61D<; 1<=' A @' C<' 1 <;<= =' D ; ' 9' C<' <I 6B 1 ' <' 9' 61< 91; =' #BM<$B>#'#>SA'B3 AF =' 9' C<' 1 1= ; ' EA=' ' A><' 9; . 'KB;1<=' C<' ;1?C ' 9' @< ' 'd

F1@1 ?' ;<=G<F 1 ?' F;1 . <=' F . . 1 <@' D ' C<' G;<==(' A @' 'GA=='E ' . <A0 =B;<=' ;<=G<F 1 ?'1 ' 9' A' I<; ' =<;1 B=' A B;<' FF ;@1 ?' ' C<' 91;=(' C<' G 61 1FA6' < @< F ' 9' A' =<;1<=' 9' A; 1F6<=' . 1?C 'F = 1 <' A ' 99< F<' A?A1 = ' C<' 6AE=(' A6 C B?C' ' <' 9' C< . ' A>< ' D '1 =<69' F B6@' D<' = ' F = ;B<@N' A @' AFF ;@1 ?' ' C<' =<F @(' C<' F< = ;=C1G(' 1 ' F<; A1 ' =<;1 B=' F1;FB . 0 = A F<=(' . 1?C ' D<' ;<<= AD61=C<@ ' C1=' 6AE(' EC1FC' EA=' G;<=< <@' 1 ' (' EA=' GA==<@' D ' A' ?;<A ' . AK ;1

' C<' . <A 1 . <' =<F;<' = F1< 1<=' E<;<' ;?A 1M<@' 1 ' <I<; ' @1;<F 1 (' A @' g' A;D A;1= . ' <P < @<@' 1 =' IA= ' ;A . 191FA 1 =' C; B?C B ' C< >1 ?@ . ' 1 ' <I<; ' @1;<F 1 ' =' @A ?<; B=' =G1;1 ' ;AG1@6 G< < ;A <@' C<' =FC 6=' A @' C<' A; . (' A @' C<' . 161 A; 'F =G1;AF '=BGG;<==<@ 1 ' B?B= (' "(' EA=' 9 66 E<@(' @B;1 ?' C<' E ' < =B 1 ?' <A;=(' D ' . A ' . 161 A; 'G6 =(' <PW1 <@'D ' C<' A;D A;1'1 ' IA;1 B=' F ;G=' A @' IA;1 B=' GA; =' 9' C<' >1 ?@ . ' <@1 1 B=' B D;<A>=' >' G6AF<' 1 ' C<' FA I A6; ' =FC 6' 9' AB . B;(' EC1FC(' A6 C B?C' C< ' E<;<' =BG0 G;<==<@(" A ;AF <@' C<' C G<=' 9' ;A=C'F =G1;A ;='1 ' C1=' @1;<F 1 ' 0< <;A6 (<; ' A==< . D6<@' A' ; G' 9' B ?' . < (' = 6@1<;=' A @' CA69 A; . <@' G<A=A =(' A @' . A;FC<@' A ' C<1;' C<A@' D< <A C' C<' ;1 ' F 6 B; ' <' =<1M<@' C<' F1 ' 9' C BA;=' 1 ' C<' A . <' 9' AG 6< ' (' A @' . A;FC<@' BG ' AB . B;(' EC1FC' C<' F B6@' ' FA;; ' (<1 ?' E' ADA @ <@' D ' . = ' 9' C1=' 9 66 E<;=(' C<' >' ' 961?C ' A @' EA=') X$$<>77' 7@GB#<' A;;<= <@' D B ' C<' =A . <' 1 . <' C<;<' DB;='9 ; C' A' . 161 A; A' @#3B7<' ;<I 6 ' A ' (<69 ; (' ' EC1FC' C<' 166B= ;1 B=' 0< <;A6' A9A < < C1 . =<69' EA=' ' A' = ;A ?<; ' C<' 0 I<; . < ' =G<<@16 ' F;B=C<@' C1=' ;<I 6 (' A @' A ' C<' =A . <' 1 . <' . = ' FB6GAD6 ' 6A1@' A' = A;<(' 9' EC1FC' C<' <P ' 6 <6' A; ' EA=(' A ' 6 . A;(' C<' 1 . G;B@< ' I1F 1 . ' E ' =JBA@; =(' E1 C' C<' 1 < 1 ' 9' @1=F I<;1 ?' C1=' AFF . G61F<=' A @' F . G; . 1=1 ?' C1 . (' =< ' 9 ; C' <' <I< 1 ?' 9; .' 6 . A;' A @' <B9 (;1=AFC(' B @<;' C<' F . . A @' 9' JBA; <; . A= <;=(' C<' 991F<;=' D<1 ?' @1=?B1=<@' 1 ' C<' ;A >=N' C1=' ; G' #B<' B3' >7B+' ;AI<;=1 ?' C<' <1?CD B;1 ?' F B ; (' 1 @BF<@' A; ' A @' A' >+C' B @7' 9;1< @' 9' C1=(' A' ;1@1 ? . A= <;' A . <@' ?<;(' ' K 11X' 1 ' ' . A;FC<@' B @<;' C<1;' ;@<;=(' A @' @;A >' E1 C' C< . (' A @' EC< ' C<' 6A <;(' @<F<1I<@' D ' C<=<' G<;91@1 B=' @< . = ;A 1 =(' B <;<@' C<' F; ' 9' [' 1I<' 63 . G<;<B;' z' C<' = 6@1<;=' C;<E' C< . =<6I<=' BG ' C< . (' D B @' C< . (' A @' CA @<@' C< . ' I<;' ' C<' AB C ;1 1<=' ' 9<E' @A =' A9 <;EA;@=' A; ' EA=' =C ' ' F1;FB . = A F<' @1@' . ;<' CA ' C1=' A ' C1=' G<;1 @' ' F . G; . 1=<

M@' B+>L>7<$A<' L#B<' B3' @+@7A$' @7<B+

C< 0 I<; . < ' A @ ' @1=G =< . < ' ';<?A;@ C< 1 1= <;=A @ C< G 61F<' A= C< = B;F<=A @ ;1?1 A ;= 9A66 @1= B;DA F<=
C< <A;' ' E1 <==<@ = 166 . ;< <P<FB 1 = 9 ;' G 61 1FA6 F;1 . <=' (<; 'EA= A>< ' D<9 ;< C< B;' 9 ==1M<= A ' + 1F 1<;=& A& 9!@+@7>#
'A @ C< ; < 0< <;A6 A ?1 ' G 1 <@ B& E1 C B '
AF BA66 ' A . 1 ?' C< . & C< . = ' 1 96B< 1A6 @<GB 1<= 9 C< <9 ' A= C< 0< <;A63= AFF . G61F<=' 1= E ;@= <PF1 <@ 1 ' C< CA . D<;' = ; . ' @1=0
FB==1 =& EC1FC& EC16=' 9A161 ?' ' C; E A '61?C ' BG ' C< =BDK<F & = 166 9B; C<;' < I< . <@ C< GA; 'A 1 . =1 1<=' (<; 'A @ E ' 9 C1= AFF . 0
G61F<= 6 = ' C<1;' C<A@= BG ' C< =FA99 6@ A' C1;@ F . . 1 <@ =B1F1@< & +A;1= A= = 'A9 <;EA;@= C< C<A ;< 9'A ' A9961F 1 ?' =F< <' B;' g &
B ?' =BD 991F<;= 1 ' ?A; ;1= 'A ' FC<66<& CA I1 ?' D<< ' F '
I1F <@ 9 A;D A;1= . ' A @ AFFB=<@ 9 CA I1 ?' D<< ' < ?A?<@ BBM@$#@'
1 ' A ';<I 6B 1 A; ' G6 & <PF1 <@ C< = . GA C ' 9 C< GBD61F D ' C<1;' B C A @ C<1;' 91; . <==' C<1;' ?B16 ' G; K<F ' CA@ 'D<< ' FA; ;1<@ 1 ' <P<FB0
1 & DB ' C< ' E<;< <I<; C<6<=' F @< . <@ ' @<A C& A @ M@$7' @N@?D<$B+
. A;FC<@ ' C< =FA99 6@ C; B?C C< . 1@= ' 9 A' G GB6AF<
1 =G1;<@ A ' F< D ' G1 ' A @ ';<=< . < ' 'EA= CB= CA ' C< 0 I<; 0
. < ' 9 C< <= ;A 1 ' C B?C ' CA '1 ' . 1?C ' F< . ;< D A1 ' G; <F 1 '
A?A1 = ' F;1 . 1 A6 G6 = A @ ' ';<A6 G<;16= D ' . <A = 9 ;1? ; B= FCA= 1=<0
. < =
' <E' ?;<==' 9 I<;<1? = E' A==< . D6<@ A ' <; A& A ' E611FC EA=
@1=FB==<@ C< 1 . G ; A ' JB<= 1 ' 9 C< GA 1=C ;<I 6B 1 ' F;1 1 '= A< 9
0 ;<A ' @1= B;DA F<=& ;< @<;<@ 1 <I1 AD6<' D ' C< E<A> <==' A @
5 C< G<;91@ ' 9 <;@1 A @ & CA@ D; >< ' 9 ; C 1 ' C< FAG1 A6 9 CA '
F B ; & A @ A ; F1 B= F;1 . <= , C< A==A==1 A 1 ' 9 C< A ' 1 B<=A&
A . ?=' C<;= , #CA@ D<< ' F . . 1 <@& A @ F . G; . 1=<@ C< ;<I 6B 1 A; '
FAB=<' 'EA= 1 ' IA1 ' CA ' ;<61A'A @ (A66<= <; =< @<AI B;<@ ' ;<= ;A1 '
C< . < ' 9 I1 6< F<& A @ ' ';<<= AD61=C FA6 . ' A ?B1 A; ' F . DA = >
G6AF< D< E<< ' C< G GB6AF< A @ C< A6 0BA;@= A @ ;<FA66<@ C<
9;1?C 9B6 =F< <=&EC1FC CA@ A><' G6AF< 1 ' +A;1= ' C< " C 9 B?B= '
<;@1 A @& EC =<619< EA= 1 ' @A ?<;& FA; ;1<@ C1= @1==1 . B6A 1 ' = ' 9A;& 1 '
A= =A1@& A= <I< ' ' =1? ' @<F;<<= 9 @<A C A?A1 = ' C1= ' 9A1 C9B6 DB '
G E<;6<== @<9< @<;=' ' C< . <A 1 . < C< . >=& EC 'CA@ D<< ' GA; 1A66 '
@<=G 16<@ 9 C<1;' G ==<==1 =& ; B=<@ C< 1 CAD1 A = 9 C< G; I1 F<=&
;?A 1M<@ ?B<;166A=& A @ @1;<F <@ A' IA= ' F B <; ;<I 6B 1 A; ' . I< . <

1 ' A A6 1A' 9A . B=' ;AGG1= % ' 1 ' A;A? CA@ 9 ; . <@ A 9 ; . 1@AD6<' DA @ 9?B<;166A=' A @ . A;FC<@ A ' C<1;' C<A@ F;BF191P 1 ' CA @ g @ @+?K' @A<>0 <B# 1;?## <' CA@ A>< ' D 4 ' A==AB6 ' C<'9 ; ;<==' 9 <B @3 S;?<6 A @ A <?< F ' EA=' <= AD61=C<@ C<;< F =1= 1 ?' 9 C<' A;JB1=' @< A A96 ;1@A (A; ' @3 ; 6<= A @ C<' ;FCD1=C G 9 A;;A0 ? A EC1FC D ;; E<@ 6 A = A @ 1==B<@ G; F6A . A 1 =' 1 ' C<' A . <' 9 C<' -1 ?' EC .' 1 ' =BGG =<@ ' D<' 1 ' FAG 1I1 ' ' A" =C ;' 1 . <' 1 ' 9 B @ 7; K'B3'<M@ >$< 1 =<69 A ' C<' C<A@ 9 A ' A; . ' 9 E< 91I<' C B=A @ . < EC ' A==B . <@ C<' A . <' 9 C<' ; . ' 9 C<' A1 C >' ^ 0 =<==1 9 . A ' G6AF<=' 1 ' AIA1 <' A @ A A6 1A RA @ G< < ;A <@ 1 ' ;A? C<' = 1 B 1 A6 0< <;A6 1 A GB ' C1=' A; . ' ' ; B ;< >' C<' G6AF<=' EC1FC 1 ' CA@ =<1M<@ A @ 6<9 ' ' C G<' ' C<' A61= =' =AI<' 1 ' ;< FC'1 <; I< 1 ' C<' <66 E'9<I<;C EC1FC @<= 6A <@ (A;F<6 A CA@ = . <' 1 . <' =1 F<' . A@<' B1=' : ';<= 6I<' 'G = 'A'F ;@ ' 9 ; G=' ' C<' + ;<0 <<=' 9; 1<;' B @<;' G;< <P ' 9 =A 1 A; ' G;<FAB 1 = A @ C<=<' ; G=' . 1?C ' A 'A ' . . < 'D<' F I<; <@ 1 'A ' A; . ' 9 1 IA=1 ' BFC EA=' C<' = A <' 9 C1 ?=' 1 ' (GA1 ' EC< ' C<' ?;<==' F . . < F<@ 1 =' =1 1 ?=' A ' <; A ' @<' Ci <ABD;1A @ A @ A C1<B @<' . ;< F ' ;<G;<=< <@ ?;<=' 9 ;A F<' A ' <; A EC16= ' @<' 166W6<' D A1 <@ A ' +A;1=' C< <; A + ' G;<=1@< F ' 9 C<' B F16 ' ;@ <661 ? ' EA=' C<' ;<0 G;<=< A 1I<' 9 ?6A @ A ' C<' ?;<==' C<' =B1F1@<' 9 ;@ A= 6<;<A?C A @ C<' <6<IA 1 ' 9 ;' A 1 ?' ' C<' +;<. 1<;=C1G 9 C<' ?61=C 1 1= ; ' E<;<' ?; B @=' 9 ;' <PG<F A 1 ' CA ' C<' 9 ;<1? ' G 61F ' 9 CA ' G E<;' E B6@ B @<;? ' ?;<A ' . @191FA 1 =' C< AFF ;@1 ?6 ;< FC 1 <; I< 1 '1 ' GA1 ' EA=' G; G =<@ ' ;@ <661 ? ' G#1 =<@ 1 A @ ' @<' 166W6<' C G<@ CA '1 ' . 1?C ' <I< ' < ' D<' AI 1@<@ ;' A@K B; <@ ' (B ' C<' ?;<?A 1 'A @ C<' . AK ;1 '1 ' C<' CA . D<;' 9 C<' %<GB 1<=' E<;< <A?<;' 9 ;' EA;N ' @<' Ci <ABD;1A @ EA=' 1 F61 <@ 9 ;' 1 A @ C<' <99 ; =' 9 ' @<' . ;< F ';< @<;<@ 1 '1 <I1 AD6<' C<'F A?1 ' 9 C<' GA 1=C ;<I 6B 1 'AGG<A;<@ @A ?<; B=' ' ;A F<A @ . ;<' <=G<F1A66 ' ' A6 1 ' C<' < <=' 9 C<' A61= = 9 ' @<' < < . 1FC A @ C<' C;<<' 661<@ I<;<1? = A @ C< ' B A 1 . B=6 ';<= 6I<@ '=BGG;<==' 1 ' C<' . DA=0 =A@ ;=' 9 B==1A B= ;1A A @ +;B==1A' 1 . . <@1A <6 ' JB1 <@ A@;1@' C< . DA==A@ ;' 9 ;A F< O< <;A6 A?A;@<' EA=' ' < ';<FA66<@N ' @<' Ci <ABD;1A @ =BFF<<@<@ '@<' . ;< F ' A ' C<' C<A@ 9 ;<1? ' 99A1;=' &

C<' . I<. < ' EC1FC FA;;1<@ C<' ;< FC O I<; . < '1 'A' F B <;' ;<

I 6B 1 A; ‘F B;=< ;1B . GC<@‘ I<;‘ C<‘GAF191F‘1 F61 A 1 =‘ 9‘ ‘@< 166]6<‘ B1=‘ : ‘D E<@‘@ E ‘D ‘1 91; . 1 1<=‘A @‘A?<‘ ‘6 ?<;‘ ;<1? <@‘=AI< 1 ‘ A . <‘ =1<B;‘ ;<A66 ‘E1<6@<@‘ C<‘ =F<G ;<‘ A @‘ E1=C<@‘9 ;‘ EA;‘N A @‘ C<‘ CA . D<;‘ 9‘ %<GB 1<=‘ EC1FC‘ EA=‘ F . G6< <6 ‘1 ‘ AFF ;@‘ E1 C‘ C1 . ‘ ‘ C1=‘G 1 ‘ @1=G6A <@‘1 =‘ M<A6‘D ‘ C<‘ I1 6< F<‘ 9‘ C<‘@<DA <=‘ EC1FC‘ >‘G6AF<‘ ‘ C<‘ I <‘ 9‘=BGG61<=‘9 ;‘ C<‘ FCA . D<; cY‘YYYY <PG<@1 1 ‘ ‘<PG<66<@‘ A Bw6‘ C<‘ @<GB ‘ 9‘ A‘ < @W<‘ A‘ . A ‘I<; ‘C = 16<‘ ‘C<‘ (B;D =‘ EC ‘CA@‘ . A@<‘A‘ =G<<FC‘EC1FC‘ C<‘ . AK ;1 ‘ 9‘ C<‘ CA . D<;‘F =1@<;<@‘ ‘D<‘A‘KB= 191FA 1 ‘ 9‘;<?1F1@<‘ C<‘ CA . D<;‘1 <;;BG <@‘C1 . ‘A @‘I <@‘C1=‘<PGB6=1 ‘ A B<6 @<F6A;<@‘CA ‘C<‘ E B6@‘ 6 ‘ 1<6@‘ ‘‘_AF BA6 9 ;F<‘ BG ‘EC1FC‘ C<‘ +;<=1@< ‘ AI<M‘ FA66<@‘BG ‘C<‘ A 1 A6 0BA;@=‘ ‘@B ‘ ‘;<. I<‘C1 . ‘ A @‘ <;?<A ‘ <;F1<;‘ C<1;‘F . . A @<;‘ CAI1 ?‘ ;<9B=<@‘ ‘<P<;F1=<‘ C<‘ E166‘ 9‘ C<‘ ==< . D6 ‘ A B<6 EA=‘=<1M<@‘D ‘?< @A; . <=‘ ‘C1=‘D< FC‘A @‘@;A??<@‘ B ‘ 9‘ C<‘ ==< . D6 ‘ C<‘EC 6<‘ 9‘ C<‘ . < . D<;=‘ 9‘ C<‘ <9 ‘9 66 E<@‘C1 . ‘ A @‘@<F6A;<@‘ CA ‘C< ‘A66‘F =1@<;<@‘ C< . =<6I<=‘A==AB6 <@‘A @‘<PG<66<@‘1 ‘ C<‘G<;= ‘ 9‘ A B<6

C<‘<P ;A ;@1 A; ‘F;<@1 =‘A=><@‘9 ;‘ C<‘ GA 1=C‘FA . GA1? ‘E<;<‘?;A <@‘ A @‘9; .‘ C< F<9 ; C‘EA;‘ AGG<A;<@‘1 <I1 AD6<‘ ‘ B . <; B=‘A; . ‘EA=‘ A6;<A@ ‘A==< . D6<@‘ ‘C<‘ + ;< <<=‘9; 1<;‘ C<‘F . . A @‘ 9‘EC1FC‘EA=‘ A>< ‘A‘ C<‘ < @‘ 9‘ A;FC‘ D ‘C<‘ %B><‘ @3 ? 6s . <‘EC ‘CA@‘B @<;‘ C1 . ‘A=‘FC1<9‘ 9‘C1=‘= A99‘ 0< <;A6 0B166< . 1 ‘ C<‘@B><‘9 B @‘C<‘A; . ‘ ‘C1=‘A;;1IA6‘B G; I1@<@‘<1 C<;‘E1 C‘=B991F1< ‘ . <A =‘ 9‘ ;A =G ;‘ ;‘G; 0 I1=1 =‘A @‘< <;<@‘1 ‘ <; B=‘ D61?A 1 =‘ ‘A‘E<A6 C ‘DA ><;‘EC ‘ 99<;<@‘ ‘G; I1@<‘ECA ‘EA=‘EA 1 ?‘A @‘EC ‘1 . G =<@‘BG ‘C<‘G;1 F<‘ . = ‘?; ==6 ‘ C<‘A; . ‘< <;<@‘C<‘91<6@‘ ‘C<‘ C‘ G;16‘ GA 1=C‘ A @‘ ‘C<‘9; 1<;‘A‘ C<‘GA=‘ 9‘ (1@A== A‘< F B <;<@‘A‘ DA A61 ‘ 9‘1 =B;?< =‘D<A;1 ?‘ C<‘ ;1F 6 B;‘96A?‘ ;< FC . < ‘EC ‘CA@‘ D<< ‘< ?A?<@‘1 ‘C<‘ . 161 A; ‘F =G1;AF1<=‘A @‘A . ?= ‘ C<;=‘ AG A1 ‘ A 16‘A @‘ 6 <6‘'+AD I1<;‘ . A;FC<@‘A‘ C<1;‘C<A@‘A @‘A@IA F<@‘ EA;@=‘ C<‘ ; G=‘ ‘9;A <; 1M<‘E1 C‘ C<. ‘F; 1 ?‘ [1I<‘63 . G<;<B;‘ ‘ [1I< 6A‘ ;A F<‘z‘ 0< <;A6 A61 ‘C E<I<;‘@1=G<;=<@‘ C<‘1 =B;?< ‘DA A61 ‘E1 C‘ C1=‘A; 166<; ‘A @‘ C<‘=BFF<==‘ 9‘ C<‘FA . GA1? ‘EA=‘=<FB;<@‘ C<‘A; . ‘1 ‘ 9AF ‘EA=‘B @<;‘ C<‘ ;@<;=‘ 9‘ C<‘ B@1 =‘ F< =‘A @‘ 61 ;=‘ 6@‘ C<; <=‘ 9‘ C<‘<. G1;<‘A @‘ C<‘ GA 1=C‘?B<;166A=‘ ‘9A A6 9 ;. <;6 ‘ ‘ C<‘ ;< FC‘I< <;A =‘ C1=‘ 1 . <‘9 B?C ‘E1 C‘ ;A F<‘ C<‘I1F ; ‘F B6@‘ ‘ D<‘@ BD 9B6

C< ;< FC A; . '=G<<@16 'A; ;1I<@ A' A@;1@ EC1FC C< ; <= CA@ JB1 <@ FA; ; 1 ?E1 C C< .' <;@1 A @ 91;=' ' <I166< A @ C< ' ' A@;1@ A9 <;' CAI1 ?' @<F6A;<@ C1 .' @< C; <@ ' AFF B ' 9 1 . D<F161 ' C1= AB@AF1 B= A @ ?B16 ' . <A=B;< EA= I<; ' 61><6 ' ' G; 6 ?' C< EA; ' <? 1A 1 = E<;< < <;<@ 1 ' E1 C C< . @<;A < F = 1 B 1 A6 ?< <;A6=
=BFC A= (A66<= <; =; 166 A @ @3 D1=DA6 A @ AD B ' C< =A . < 1 . < C< G;1 F< ?< <;A61==1 . '9 ; . <@ 1 'A =G1;1 ' 9 F F161A 1 A GA 1=C <?< F ' A ' A@;1@ B @<;' C< G;<=1@< F ' 9 C<%B>< 9 9A A@ E1 C 61<1 < 0 1 ' 9 ><<G1 ?1 'FC<F> C< . < . D<;= 9 C< 6@SB A 9 <B@3 ;?<6 EC =< D61 @ I1 6< F< <PF1 <@ D ' C< 9A A 1F1= . ' 9 C< ; . 9 C< 11 C C;<A < <@ GA1 ' E1 C A . B;@<; B= ;<AF 1 ' C1= A; . ' A @ C< G GB6AF< 6 'AEA1 <@ C< A; ;1IA6 9 C< ;< FC ; G= '?1I< C< . =<6I<= BG ' AF = 9 F;B<6 A @ DA=< I< ?<A F<' C< ;< FC = 6@1<; 1 <;9<;<@ D< E<< ' C< .' A @ C<1;' I1F 1 . = A @ E<;< =G<<@16 ' 6 ><@ BG ' E1 C CA ;<@ A @ @1= ;B= ' D ' C< I<; 'G<;= = C< 'CA@ F . < 'A==1= ' ' EA= E1 C C< 1 < 1 ' 9 G;<I< 1 ?' C<=< =F< <= 9 D;1?A @A?< A @ . B;@<;' CA ' C< %B>< @ ? B6 . < 1==B<@ C< F<6<D;A <@ @<F;<< 9

; 1BKY'Q' @BKA; EC1FC G; C1D1 <@ C< GA 1=C AB C ;1 1<= 9; .
> B <' , A; ;<= 1 ?A ' < E1 C B ' C< =A F I ' 9 C< ;< FC 991F<;=
A @ G6AF<@ C< <@1 ;= 9 C<K B; A6= B @<;' C< @1;<F 'G; <F 1 ' 9 C<=< 991F<;=' C1= @<F;<< EA= 9B66 9 E1=@ . A @ 1 ' F 9 ; . 1 ' E1 C C< G;1 F<3 EC 6< F B;=< 9 F @BF ' @B;1 ?' C1= FA . GA1? N DB ' 1 ' @<<G6 ' 99< @<@ C< <?< F ' A ' A@;1@ A @ D ' ' . <A = < @<@ ' ;< @<;' C< ; <= A ' A@1M . ;< ;AF AD6<' C< 6A <; C ; B?C6 'AFJBA1 <@ A= C< ' E<;< E1 C C< FCA;AF <;' 9 <;@1 A @ CA@ ' 9A1 C 1 ' C< <99<F ' 9 C< G; . 1=<= 9 C<%B>< @3 ? B6< . <EC 'G6<@?<@ C1 . =<69 ' D A1 '61D<;A6 1 = 1 B 1 =9 ;' C< .'9; .' C<1;' -1 ?' C< ' ;<K<F <@ A ' C< G; G =1 1 =

>L<D7@' B3' <M@' 7B?>C@7B ' +C' B3<M@ L>+$>M' 4 S>7' 2 ?<BJ@7'

EC1FC C<1;' E<A> <== =C B6@ CAI< 1 @BF<@ C< .' 'AFF<G A @ C< ';< FC ; G= C< 'G<;9 ; . <@ = . < F;A66A '=9<A = 9 A; . =' C< 'A AF><@ C< 9 ; . 1@AD6< DA <;1<= 9 C< =6< 9 < N C< ; FA@<; 'EA= A>< ' 1 ' C< G;1 F<3 G;<=< F<N A@1M =BD . 1 <@N A @ <;@1 A @ 'EA= 1 . . <@1A <6 '=< '9;<<

C< EA;' EA= A ' A ' < @ A @ GB 1=C . < = 9F<?A ' <;@1 A @ FC =< A= C1= 1 1= <;= . < ' 1 =G1;<@ E1 C C< . =' I1 6< 'GA; ' =G1;1 ' C< <P<FB 1 ' 9 1<? ' =1? A61M<@ C1= ;< B; ' ' C< C; <A @ C< 1 <;0 I< 1 ' 9 C< ;< FC 1 ' 9AI B;' 9 C<;' I1F 1 . = EA= I . AIA161 ?' ' G;<FAB 1 = CA@ D<< ' A>< 1 ' 9AF A ' C< ?;<== 9 <; A ' G;<

=<;I< GA1 ' 9; .' C< .1=9 ; B <= 9 A =A ?B1 A; ' ;<AF 1 ' C< 1 . 0 . < =< <PG< =<= 9 C< EA;' ;< . A1 <@ A DB;@< ' ' ;A F<@ A @ C< 6 ' 9;B1 '=C< ?A C<;<@ 9; .' C1= D;1661A 'A @ <; B= FA . GA1? ' EA= C< 1 0 ?;A 1 B@< 9 C =< 9 ;' EC .' =C< CA@ . A@<'= ' . A ' =AF;191F<=' BFC 1= C< G;<= 1?<@ C E<I<;@ EC1FC 1 ' ;A F< A6EA = A AFC<= ' I1F ; @ CA @B;1 ?' C< 91;= ' . . < = EC1FC 9 66 E<@ C< =BFF<== 9 C< ;< FC A; . = 1 ' GA1 @ C< 1 . G;<==1 ' FAB=<@ D ' CA ' =BFF<== EA= I<; ' 9AI 11;AD6< ' C< 6 ;A A61= 'GA; @ C< = 6< AB C ;= 9 C<'EAP' ' < AD6<@ C< .' ' FA;; ' . = ' 9 C< GA; 1A6 <6<F 1 = EC1FC 9 66 E<@ C< FA . GA1? @@ AB@ ' @< 166]6< F F<1I<@ C< 1@<A 9 <= AD61=C1 ?@ C1= G E<;' ' A . B BA6 ? @ B @<;= A @1 ?' D< E<< ' C< 0; I<; . < 'A @ A =<G < 1A6 CA . D<;@ ;' < <6<F <@ 9 ;' =<I< ' <A;=

(<=1@<= C< GG =1 1 ' 9 C< <9 @ 61<;< EA= E 9 ; . <@ 1 ' C< CA . 0 D<;' A C<;@ EC1FC EA= ' 6<== C = < ' C< 1 1= <;=@ EC 1 ' 1 ' AFFB=<@ 9 D<1 ?' 6B><EA; .' 1 ' C< A61= ' FAB=<' ' @< 6A (B6 @ A < A @ %<6A6 ' E<;< 1 = < <;?< 1F 6<A@<;=' AFC 9 C<=< . < ' EA= 1 . DB<@ E@ C 1@<A= EC1FC E<;< ;A C<;' A;1= F;A 1F CA ' . A;FC1FA6@ A @ @< . A @<@ CA ' C< 6A @<@ 1 <;<= ' =C B6@ CAI< A ?;<A ' =CA;< 1 ' C< @1;<F 1 ' 9 A99A1;=' C< ' I1 6< 6 ' AFFB=<@ ' @< 166]6< 9 CA I1 ?' 9A16<@ ' 9B6916 C1= G6<@?<= E1 C ;<=G<F ' ' C1= . A <;@ A @ C< 6A <;' C G<@ CA @ D ' F 0 I >1 ?' A <E CA . D<;' EC16= ' C< 1 . G;<==1 ' G; @BF<@ D ' C< GA 1=C FA . GA1? ' EA= = 166 ;<F< @ C< . 1?C ' G; FB;< < < 1;<6 ' @<I <@ ' C1= I1<E=@ A @ CB= D< < AD6<@ ' F;B=C A @ BD6< A @ 9A 1?B1 ?' GG =1 1 ' C< - 1 ?' A @C1= B F16 =CA;<@ C< G1 1 = 9 C< 1 1= <;' N C< CA . ' 5 'D<;' EA= @1== 6I<@@ A @ <I<; ' G;<GA;A 1 ' EA= . A@< 9 ;' A ?< <;A6 <6<F0 1

C1 ?' F B6@' D< . ;< =FA @A6 B= ;' . ;< 9A A6 ' C< . ;A6 AB C ;1 ' 9 C< 0 I<; . < ' CA ' C< . A <;' 1 ' EC1FC E<;< F #@?<$B+ 'B3 @BF <@' ' C< <6<F 1 = 9 @ EC1FC >' G6AF< A ' C< F . ' . < F< . <B ' 9 C< <A; ' 1;FB6A;= C;<A < <@ C< 991F1A6= EC ' CA@ C< =BG<;1 < @< F< 9 C< <6<F 1 = E1 C @1= . 1==A6 19 C< ' @1@ ' =BGG ;' C< . 1 1= <;1A6 FA @1@A <=@ A @ . A ' 9 C< . ' ;<=G @<@ ' C< E1=C<= 9 C< B F16 D ' CA I1 ?' ;<F B;=< ' 9;AB@ A @ @1=G6A 1 ?' C< . = ' DA=< =<;0 I161 ' AI1661 ?= 9 <I<; ' >1 @ E1 C ;<=G<F ' ' C< 1D<;A6 <6<F ;=@ A;D1 ;A; ' <;A=B;<= A @ 1 =<; 1 = 1 ' C< <6<F ;A6 61= =@ A @ C< 1==B< 9 9A6=< G 661 ?' 1F>< =@ E<;< ADB=<= EC1FC E<;< G<; . 1 <@@ < F B;A?<@@ A @ <I< ' ;<EA;@<@ D ' C< 1 1= <;=@ EC @ D= 1 A <6 ' G<;=1= 1 ?' 1 ' ? I<; 1 ?

2* " ! /' 0 ! $: !> 8*

1 A =G1;1 GG =<@ C< ?< <;A6 9<<61 ?' C< A 1 F B6@ 6 . A1 0 A1 C<1;' G =1 1 D FA661 ?' C<1;' A1@ ;1F><; D;1D<; A @ I1 6< F< . < < . 1 < . < >' A AF 1I< GA; 1 C<=< @<G6 ;AD6< . A <BI;<= #' A @' A' . A @A < 1==B<@' D 6<; . <; ;<; ;FCD1=C G 7?MJ$AMBL' 9 9 @ B=<= =C E<@' C< < @' EC1FC' C< < @<@ A @' D< 9) ;A <@' C< =<F;< C G<= A @' . < 1 = 1' C< I1F ;1 B= GA; C< ;FCD1=C G' @< . A @<@' C< ;<= ;A 1 9' C< A F1< G;1I1 6<?<= 9' C< CB;FC' 9' ;A F< ~ < ;<<= AD61=C . < 9' A C< = 6< . 9s <= 9' C< ;1?C = 9' C< F6<;? A= C< 9 ; . <;6 <P1= <@ A @' 9' . A ;<61?1 B= ;@<;= EC1FC' A C1= G<;1 @' E<; A66 E<@' ;<=1@ 1 ;A F< 1 A66 C< <PG;<==<@' A' C G< CA C< F1I16 G E<;' E B6@' D<0 F . < 6 @?<@' 1 C< CA @= 9' C< F6<;? C1= ;A=C' . A 19<= EA= =BG0 G;<==<@' D C< B F16' 9' A < A C< =B??<= 1 9' + ; A61= N DB 1 ;<I1I<@' C< 6@' @1=GB <= D< E<< C< F6<;? A @' C< . A?1= ;AF A @ A; B=<@' C< GG =1 1 9' C< A6' B; = C< < F; AFC . < = 9' A' I1 6< GA; A @' C< @< . A @= 9' C< AD1 <

C< ;<=B6 9' C< <6<F 1 = =B;GA==<@' C< C G<= 9' C< A61= = A @ 1 < << 1D<;A6' @<GB 1<= 6 E<;< <6<F <@ C1= 4 .

#B 9# . 1 1 = ; B= ADB=< 9' C< 1 96B< F< 9' C< O I<; . < I<;' <6<F0 <7><$G@' LBS@7 CD7$+ <M@ @#@?<$B+A 1 = CA@ A6EA = D<< 1 ;A F< =1 F< C< 9A66' 9' C< 6@ = = < . 9' C1 ?= < 9' C< . = 9A A6' <99<F = 9' A <PF<==' 9' A@ . 1 1= ;A 1I< F< ;A61MA 1 A @' C< =BFF<==1I< ? I<; . < = EC CA I< . . < A;16 D A1 <@' A' 9AF 1 1 B= =BGG ; 1 C< =B99;A?<= <PAF <@' D C< . =<6I<= CAI< A6EA = B6 1 . A <6 9 B @' 1 C< . < 9' C< @<F1=1I< FAB=<= 9' C<1;' 9A66 1= 1 C1= CA F =1= = G<;CAG= C< ?;<A <= @A ?<;' 9' =BFC' GA;61A . < A; A @' ;<G;<=< A 1I< ? I<; . < = A= CA 9' C< <= ;A 1 1 ;A F< @<;' C<=< 9 . = 9' ? I<; . < 1 9AF 1 1= B @<;= @' CA C< A 1 1= A>< GA; 1 C< F @BF 9' 1 = E A99A1;= A @' 1 1= D . <A = 9' C< <6<F 1 = CA 1 <P<; = 1 = 1 96B< F< J DB 19' C =< <6<F 1 = A;< C< ?< B1 < <PG;<==1 9' GBD61F' G1 1 C< ;<G;<=< 6 C< GA; EC1FC' 1= 1 G E<;N A @' 61< C< 6A <;1 P10 FA <@' E1 C' 1 = E AGGA;< = ;< ? C A @' ;<6<A=<@' 9; . <I<; =A6B A; FC<F>J 6 ?<;' C 6@= GBD61F' G1 1 1 A AFF B DB F;B=C<= A @' ;<G;<=<= 1 B 16 61>< = <A . 1 <PG6 @<= I<; C; E= <I<; C1 ?' 1 1 = EA A @' C;<A < = @<= ;BF 1 6 C< . A;FC DB = F1A6 ;@<; BFC' 1= C< =G<F AF6< G;<=< <@ B= D C< C1= ; 9' C< <0 = ;A 1 @B;1 ?' 1 = 6A= <A;=

C< <6<F ;A6 6AE 9 61< @ BD6< I < CA@ A6;<A@ ?1I< 9A; 6A;?< A G; G ; 1 9 C< =<A 1 C< <6<F 1I< CA . D<; CA F6A= 9 ;1FC 6A @<@ G; G;1< ; A . ?= EC . E<;< . A . < D<6 ?1 ? C< D1@ 9A . 161< _EC1FC CA@ D<< I1F 1 . 9 C< <I 6B 1 A @ EC ;<?A;@<@ C< FCA; <;# <1 C<; A A 9A A6 6<?AF 9 A @< <= <@ G<;1 @ ; A ; <F<==1 C< 0 I<; . < CA@ 9A66< F< . ;< 1 C< CA @ 9 11<1; 9;1< @= A @ C< ?< <;A6 <6<F 1 9 A F @BF <@ A C< E<;<A B @<; C< 1 . . <@1A < 1 96B< F< 9 C< 0 I<; . < A CA@ ?1I< C<1; GA; A 1 . 0 . < =< . AK ;1 1 C< <6<F 1I< CA . D<;A 9; . EC1FC C< 1D<;A6 GG =1 1 G CA@ A6 . = @1=AGG<A;<@ (B C< ?; B @ EC1FC C< 6A <; CA@ 6 = 1 C< FCA . D<; 1 CA@ ?A1 <@ D< @ 1 = EA66= 1 GBD61F G1 1 A EC1FC CA@ D<F . < @1=JB1< <@ A @ 1; ;1 A <@ D C< ;<AF 1 A1; < @< F1<= 9 C< 0 I<; . < A D 1 = =BD=<; I1< F< C< F6<;1FA6 GA; A D . A 9 1 = GA= AF =A @ D A66 C =< EC1FC 1 EA= G; G =1 ? AFF . G61=C = C< F B; A @ C< . 1 1= < ;<9B=<@ A>< 1 A AFF ; . C< ?< <;A6 G1 1 ; C< E1=C<= 9 C< F B ; A C< G; D6< . EC1FC ;< . A1 <@ D< = 6I<@ EA=A C E ;<@BF< GBD61F G1 1 =16< F< D A =<;1<= 9 F B <; ;<I 6B 1 A; . <A=B;<=A D C< A1@ 9 EC1FC C< ?;<?A 1 A @ C< 6 ;A A61= 96A <;<@ C< . =<6I<= CA C< . 1?C '1 F;<A=< C< AB C ;1 9 C< <;;1 ;1A6 A;1= F;AF A @ C< F6<;? A @ ;< @<; C<1; 1 96B< F< 1 C< >1 ?@ . @ . 1 A A @ < @B;1 ? 1 . < EA= A 1 @1=0 G< =AD6< <6< . < 1 C< = 6B 1 EC1FC EA= D< <99<F <@ 9 C1= @1991FB6 G; D6< . D C< A1@ 9 A @<I <@ . AK ;1 |C< G<;1 @ 9 91I< <A;= A==1? <@ D C< F = 1 B 1 A= CA @P1;1 ? EC1FC C< @<GB 1<= E<; < =1 EA= 1 C< G1 1 9 C< 0 I<; . < A = . A66 9 ; C< AFF . 0 G61=C . < 9 C1= ?;<A GB;G =<A @ A C< G< 1 ? 9 C< 6<?1=6A 1I< <==1 A 1 A;FC A C< >1 ?A 1 C1= =G<<FC C< CA . D<;A B F<@ CA E 6AE= 9 ?;<A 1 . G ; A F< E B6@ D< 6<?1=1A11 BD . 1 <@ C< . C< DK<F 9 < 9 C<=< 6AE= EA= =BD= 1 B < 9 ; C< JB1 JB< 1A6 A @GA; 1A6 ;< <EA6 9 C< <6<F 1I< F61A . D<; @1;<F <@ D C< FCA; <;A 1 = < 1;< A @ =<G < 1A6 ;< <EA6 N A @ C< C<; ;<9<;;<@ C< F I<;=1 9 C< ;< = 1 =F;1D<@ 61< ?;<A D > 9 C< GBD61F @<D C< A@ G 1 9 C1= 6A <; 6AE C< . A;FC A==<; <@ B6@'A66 E 9 A ?;<A @1 . 1 1; 1 1 C< AP<=A @ F6 =< C< 6A= E B @= 6<9 D 61< <I 6B 1 &

C<=< E G; G =<@ 6AE= E<;< =1 . B6 A < B=6 G;<=< <@ D C< . 1 1= ; C< C< 91;= C< CA . D<; 9 +<<; =A @ C< =<F @ CA 9 C<

%<GB 1<= ' ' C< DK<F 1 =' CA ' C< < 1;< A @' =<G < 1A6' ;< <EA6' 9' C<' FCA; <;' E B6@' D<' F ;A; ' ' F<; A1 ' A; 1F6<=' 9' C<' FCA; <;(' 1 ' EA=' ;<G61<@' CA ' C =<' A; 1F6<=' E<;< ' 9B @A 19< A6' <=(' A @' C<"6AE(' A9 <;' ' M@A@L<@++$>#' CA I1 ?' D<< ' AFF<G <@' D ' C<' G<<;=(' EA=' =BD . 1 <@' ' C<' 6<F 1I<' CA . D<;(' 1 'EC1FC'1 ' EA=' < <;?< 1FA66 ' GG =<@' D ' C<' 1D<;A6' GG =1 1 N' A @' <=G<F1A66 'D ' <; A;@& EC ' FA;<9B66 ' =<' L@@?M B3' BK@70' A@ I A A?<=' 9' C<' GA; 1A6' ;< <EA6'G;<=F;1D<@' D B >7C' FCA; <;' A @' C<' @A ?<;' 9' I1 6A 1 ?' 1 ' D ' C<' =B=G< =1 9' C<' <6<F 1 =' @B;1 ?' =<I< ' <A;=' <' G 1 <@' B ' CA ' C<' < 1;<' A @' =1 . B6 A < B=' ;< <EA6(' 19' <99<F <@' 9;<<6 (E I16@' D<' ' ;B@<' A' =C F>' 9 ;' A ' ? I<; . < (' A @' CA ' 19' 1 ' E<;<' ' <99<F <@' 9;<<6 ' 1 ' E B6@' C; E' C<' EC 6<' 9' ;A F<' 1 ' C<' CA @=' 9' C<' 1 1= <;=' D ' . <A =' 9' C<' A@ . 1 1= ;A 1I<' F< ;A61MA 1 ' A ' C<1;' @1=G =A6 ' 5 [' ' 1=' ' F< ;A61MA 1 (' =A1@' C<' ;A ;([' ' CA ' . = ; B=' G E<;' EC1FC' CA=' D<< ' ;A1=<@' ' C<' ;B1 =' 9' A66' B;' 1 = 1 B 1 =(' CA ' 1=' F 91@<@' C<' ?BA;@1A =C1G' 9' A66' B;' G 61 1FA6' ;1?C =' ' ' C<' AD=< F<' 9' 9;<<@ .' 9' <6<F 1 =' A66' . 1 1= <;1A6' ;<=G =1D161 ' @1=AGG<A;=(' A @' 1 ' 1=' CB=' CA ' C<' ;<G;<=< A 1I<' ? I<; . < ' CA=' D<< ' @1=?;AF<9B66 ' G<; I<; <@N 1 = <A@' 9' <6<IA 1 ?' 1 ' @<?;A@<=' B =N 1 = <A@' 9' < F B;A?1 ?' C<' F . . ' < <;? ' A @' FC<;1=C1 ?' C<' G;1 F1G6<' 9' C B;' EC1FC' 1=' B;' GBD61F' =G1;1 ' A @' C<' @1? 1 ' 9' C<' A 1 (1 ' = 196<=' A @' G; =F;1D<=' 1 ~' <; A;@' @< . = ;A <@' E1 C' A66' C<' <6 JB< F<' 9' F I1F 1 ' A @' 9' A6< ' C<' B;?< ' <F<==1 ' EC1FC' C<;<' <P1= <@(9 ;' C<' GB;G =<' 9' C 6@1 ?' 1 ' FC<F>' A ' GG;<==1I<' A @' B 0 61 . 1 <@' F< ;A61MA 1 (1 = 1 B 1 =' EC1FC' =C B6@' D<' C<' ?BA;@1A =' 9' C<' ;1?C =' 9' A66(A @' EC1FC' E B6@' D<' FAGAD6<' 9' = B @1 ?' C<' J6A; .' EC< 0 <I<;' = F1< ' =C B6@' 91 @' 1 =<69' A AF><@' 1 C B ' =BFC' 1 = 1 B 1 =(C<' =A1@(;<G;<=< A 1I<' ? I<; . < ' EA=' DB ' A' GCA .' A @' A' A . <' 66' C1=' <99 ; =(C E<I<;(E<;<' 9;B1 6<==(A @' C<' 6AE' EA=' GA==<@' D 'A' 6A;?<' . AK ;1 C<' =<F @' G; K<F ' . < ' E1 C' A' I<; ' @199<;< ' 9A < ' ' EA=' F <F <@(1 ' C<' . 1 @=' 9' 1 =' AB C ;=(E1 C' A' G6A ' 9 ;' C<' ;<1 . DB;=< ' 9 ;YC< I<;' . < ' 9' C<' 6 ==<=' =B99<;<@' D ' C<' 6@' < . 1?;A =' ;' C<1;' 9A . 161<=' D ' . <A =' 9' C<' ;<= B;F<=' EC1FC' 1 =' A@ G 1 ' E B6@' ?1I<' ' C<' ;<A=B; ' =' DK<F ' EA=' C<' F I<;=1 ' 9' C<' 91I<' G<;' F< (;< <=(EC1FC' A . 1 . <@' ' A' CB @;<@' A @' 9 ; ' . 1661 =(1 ' C;<<' G<;' F< =(A ' C<' G;1F<' 9' =<I< 91I<' G<;' F< N A @' DA ><;=' E<;<' < ?A?<@' '9B; 1=C' C<' <F<==A; ' 9B @=' 9 ;' C<' ;<GA . < ' A ' GA;' 9' C =<' C 6@<;=' 9' 91I<' G<;' F<B ' ;< <=' EC ' . 1?C ' @<F61 <' ' AFF<@<' ' C<

G; G =<@' <PFCA ?<' C1=' G6A ' B=<9 16' A=' 19F E B6@' D<' ' C<' 0 I<; . < ' AGG<A;1 ?' 1 ' = . <' ;<=G<F =' GG =<@' ' C<' < ?A?< . < =' < <;<@' 1 'D ' C< . ' A @' A@I<;=<' ' C<' 1 <;<= =' 9' C<' B . <; B=' F6A==' 9' [' ;< 1<;=&Q' <PF1 <@' . BFC' A ?; ' 9<<61 ?' C<' CA . D<;' 9' %<GB 1<=' A@ G <@' 1 N' DB ' 1 ' EA=' ;<K<F <@' D ' C<' CA . D<;' 9' +<<;='N A' 9AF ' EC1FC' EA=' 1 ' = . <' @<?;<<' @B<' ' C<' # AF1 ' ## GG =1 1 ' 9' ' @<' C<F . D<;'e9 +<<;= CT <ABD;1A @' ' @<' 166]6<' 1 . . <@1A <6 ' @< . A @<@' ' C<' @1= . 1==A6' 9' C1=' F 66<A?B<' EC1FC' C<' D A1 <@' A @' h ' C1=' I1 6< ' G; 0 F<<@1 ?' CA= < <@' C1=' I ' 9A66 ' CT <ABD;1A @' <P ;< . <6 ' G1= 1KKA1 9 1;;1 A <@' A ' C1=' @1= . 1==A6' A ' F<' F . . < F<@' A' F 961F ' E1 C' CT1<ABD @' C1=' 6A <' 9;1< @=' A @' F 66<A?B<=' C<' . 1I<=' 9' EC1FC' E<;<' D ' ' . <A =' KB= 191AD6<' DB ' EC1FC' EA=' ' C<' 6<==' 1 . G6AFAD6<' A @' ' C<' @<A C ' <' A ;AF <@' ' C1=' =1@<' . A ' @<GB 1<=' 9' C<' 1?C ' A @' C<' BF6<B=' 9' A' <E' GA; ' EA=' 9 ; . <@' EC1FC' EA=' = 6<@' D ' C<1;' A@I<;=A;1<=' C<' GA; ' 9' @<9<F 1 ' A @' 9' EC1FC' C<' ' ' ' D<FA . <' GA; ' 9@<9<F' C<' AF 1I<' A @' 9 ; . 1@AD6<' ;?A

' @<' @<' <BI1 <' C<' ;< FC' A . DA==A@ ;' A ' 1=D ' A@ G <@' A ' C1=' G<;1 @' A ' <P ;< . <6 ' D 6@' 61 <' 9' F @BF ' ' C<' 8" C' 9' G;16' C<' 9A ' % ' 1?B<6' EC ' EA=' C<' ;<G;<=< A 1I<' 9' C<' AD= ' KK1=A;DA F<=1 ' 6B <' GA; ' A @' =BGG ; <@' D ' C<' JB<< ' . C<;' CA@' GB ' C1 . =<69' A ' C<' C<A@' 9' C<' ; G=' 1 ' CA ' FAG1 A6' A @' ><G ' - 1 ?' S C ' ' C1=' 9A C<;' A' G;1= <;' 1 ' C1=' E ' GA6AF<' N A ' C<'=A . <' 1 . <' C; E1 ?'=<I<;A6' . 1 1= <;=' A @' . A ' < . 1 < ' G<;= A' 1 ' G;1= ' A @' 6 B@6 ' A B F1 ?' C1=' 1 < 1 ' 9' ;<= ;1 ?' ' C<' ; A6' AB C ;1 ' 1 =' A F1< ' G;<; ?A 1I<= ' ' @<' @<' <BI1 <' ?< C<;' E1 C' C<' ?61=C' . DA==A@ ;' A==1= <@' S C ' 6 ' ';<F I<;' C1=' =F<G ;<' A @' % ' 1?B<6' EA=' @;1I< '9; .'+ ; B?A6' C<' ;< FC' . DA==A@ ;' 1 FB;;<@' C<' D6A . <' 9' C<' 6 ;A A61= =' 9 ;' CAI1 ?' @<F6A;<@' A?A1 =' C<' G;1 F<' EC ' AGG<A;<@' A6 C B?C' A' ;<D<6' 'D<' C<' 1 0 FA; A 1 ' 9' C<' G;1 F1G6<=' 9' AD= 6B <' G E<;'N A @' EC16=' C<' 1D<;A6' G;<==' ;<G; AFC<@' C<' ;< FC' 0 I<; . < ' E1 C' 1 =' ;< ; ?;A@<' < @< F1<=' C<' K B; A6=' 9' C<' GG =1 <' GA; ' D1 <;6 ' AFFB=<@' 1 ' 9' @16A ;1 <==' 1 ' =A 1=9 0 1 ?' C<' @< . A @=' 9' C<' <P ;< . <' A61= =

C<' 0 I<; . < ' E' GB ' 1 ' 9 ;F<' C =<' A; 1F6<=' 9' C<' 6AE' EC1FC G<; . 1 <@' 1 ' ' G; =<FB <' K B; A6=' ' AFF B ' 9' C<' ?< <;A6' < @< F ' 9 C<1;' A; 1F6<=' ' D; B?C ' =<I<;A6' <@1 ;=' ' ;1A6' 1 ' C<' A6' B; =' A @' 1 ' A6 . =' <I<; ' FA;<' C<' . A?1= ;A <=' A@<' F . . ' FAB=<' E1 C' C<' G;<==' A?A1 =' @1<' B; ' A @

7BA@?D<$B+' >+C >?aD$<>#B3'+D ; @0 ; BA'K B; A61A =

" 0 ' ! /' 0 ! ' # $ ' : >' ' 8 * T '

ASb1 < ' -' 0 I<; . < ' ;< @<;<@' C' GG =1 1 ' 9' C' KB@?<=' = 166 . ;' @< <; . 1 <@' D 'F< =B;1 ?& C<1;'KB@? . < =' C' 6AE' 9' ' < AD6<@ 1 ' ';<<= AD61=C' C' F< = ;=C1G' 1 ' FA=' =<;1 B=' F1;FB . = A F=' @@A<AJ$$>M : @+<' B3'<M@'?@+AB7@' =C B6@@ ;' @<;' C1=' . <A=B;' <F<==A; & A @&' A=' C' 1 1= <;= AM$L =AE' A' =<;1 B=' @A ?<;' 1 ' C' AFJB1 A6=' G; B F<@' D ' C' A6' B; =& C< ' ;<<= AD61=C<@' C' F< = ;=C1G' ' C1=' ?; B @' A6 <& A @' CB=' @<F6A;<@' C< . =<6I<=' 1 ' @1;<F ' GG =1 1 ' ' C' . A?1= ;AF ' C' F6<;? ' D A1 <@' A ' C1=' G<;1 @' C' AGG 1 . < ' 9' A' 1 1= <;' 9 ;' <FF6<0 =1A= 1FA6' A99A1;=' C' 91;=' AGG 1 <@' EA=' A' D1=C G& '@<' ;A ==1 B=&' A @' C' @1;<F 1 ' 9' GBD61F' 1 = ;BF 1 ' EA=' . A@<' <' 9'C1=' 9B F 1 = 3 x C' - 1 ?' EA=' E' A ' C' <@?<' 9' C' . D' ' B @A & <G < . D<;' " C& C' F B6@' 'C 6@' A ' AB@1< F<& A @' A' 9<E' @A =' 6A <;' C< >A' ; B ; @+<A' B3 $FD$$' " ' G7>A' A<7@<?M@C' B+' M$A8C@><M0J@C ' AD77BD;+C@C' JK' <M@' ; @ ; J@7A @L<@ ; J@7 ' , /' 9' C' ; A6' 9A . 16 ' <' @1;<F <@' C1=' 1 1= <;=' ' AF ' 1 ' F F<; ' E1 C' C1=' D; C<;'N A @' 1 ' C' 6A=' 1 <; I1<E' EC1FC' C' CA@' E1 C' =1<B;& C' C=A1@' 'C1 . & [' 'CAI' D<< ' A=' < ; ' ' EA=&' A @' 'CAI' C' A@IA A?' I<;' C1 . & 1 ' CA ' 'A . ' @ 1 ?' 1 ' . 'D<@' A ' C' B16<;1<=' N @ ' A=' ' CAI' @ <& A @' B' E166' A6= ' CAI' A=' G<AF<9B6' A @' ;A JB16' A ' < @' ' 9 ;?1I' B"A 'A A F<=' B' . A ' CAI' FAB=<@' . <& D ';<A= ' 9' C' C G<=' ' CAI' 9 ; . <@' 9' ECA ' E166' D' B;' F @BF ' A=' >1 ? ' C' 6@' . A;FC' C< ' FA66<@' @ E ' BG 'A66' C1=' ;<6A 1 =' C'D< <@1F 1 ' 9'C<AI< & A @' 6A 1 ?' C1=' CA @' ' C' %B><' @<' (;@<ABP& C' 6A= 'A @' 9<<D6' 99=G;1 ?' 9' C1=' ;AF<& C' =A1@' E1 C' A' I 1F' 9B66' 9& < . 1 & A=' C' 6 ><@' A ' C1=' D; C<;& [' < ' CA;6<=' : 'G;<=<; I' C' F; E '9 ;' C1=' FC16@ ' $A' C@><M <' ?AI' C1=' 6A= ' =1?C& A9 <;' A' G; ;AF <@' A? & A @' CA;6<= : ' EA=' - 1 ?& %B;1 ?' . A ' <A;=' GA=' B1=' : ' CA@' D<< ' B AD6<' ' EA6>' B99<;1 ?' 9; .' 1 FB;AD6<' @1=<A=<' 1 ' C1=' 6<?=& A @' ; . < <@' $A' ?M>7>?<@7 D ' C' ? B & C' CA@' G<;F<1I<@& 6 ?' D<9 ;' C' C1=' @<A C& CA ' C1=' 1 <66<F BA6' 9AFB6 1<=' E<;' 9A161 ?' C1 . & A @' EA=' F . G<66<@' 'ADA @ ' C' @1;<F 1 ' 9' GBD61F' A99A1;=' ' C1=' D; C<;' ' EA=' A ' C' F6 =' 9' C' GA 1=C' EA;' CA ' C' - 1 ?3=' C<A6 C' EA=' . =' =<;1 B=6 ' A99<F <@& A @' 1 ' 1=' ' 'C11G' CA ' 1=' 'D<' A ;1DB <@' C' F B;=' GB;=B<@' D ' C' 0 I<; . < ' A9 <;' C' <6<F 1 =' 9'

B1=' : ' EA=' '<P< . G ' 9; .' A' = ; ?' A @' A B;A6' G;<@16<F 1 ' 9 ;' C' = = < .' 9' C1 ?=' B @<;' EC1FC' C' CA@' D<< ' D ; & DB ' C' F B6@' AGG;<F1A <' C' <F<==1 1<=' 9' ;A F<& A @' C' FCA; <;' ' EC1FC' C' A991P<@

CA'1'CA@'<= AD61=C<@'1' ;A F<'G E<;='EC1FC'E<;';1IA6='9'C1=' E '(;' A'? I<; .< 'EC1FC'@1@' '=G;1 ?' 9; .'C1=' E '= 6<' AB C ;1 ' <' 6 ';<?A;@<@' C<' E ' CA . D<;='A='D @1<= 1 'G ==<==1 ' 9'G 61 1FA6'G E<;='. ;<' <P < =1I<'(@ BD 6<==(' CA ' C ='<' 9' C<'+A;61A . < ='A @' C<' A F1< ' A <='9' C<' >1 ?@ .(' DB ' EC1FC' @1@' ' G ==<==' . ;<' <P < =1I<' ;1?C ='61A ' C ='<' A==< . D61<=' [' ;A F<(' C<' =A1@(' [C<' - 1 ?' F =B6 =' C<' CA . D<;=(' A @' GA ='?;<A ' A < 1 ' ' C<1;' A@I1F<' A @' ;< . = ;A F<='N DB ' EC< ' C<' @ <=' ' C1 >'91 ' ' AFF<G ' C<1;' A@I1@<(' C1=' E ' E166' . B=' D<' AFF . G61=C<@ 33 (; .' C1=' 9A6=<' 1@<A' EC1FC' C<' CA@' 9 ; . <@' 9' CW ;<G;<=< A 1I<' ? I<; . < ' 9 B @<@' ' C<' FCA; <;(' A; ='A ' C<' @1= B;0 DA F<='EC1FC' >'G6AF<' @B;1 ?' C1=';<1? (' A @' C<';B1 ' 9' C<' . A;FC ' 1 A66 (' CA;6<='' :' ';<?A;@<@' A='@A ?<; B='A @' CB . 161A 1 ?' ' C1='F; E ' A ' F F<==1 ' ' GBD61F' G1 1 'N A @' EC16=' C<' 6A <;' F6B ?' E1 C' <I<; ' 1 F;<A=1 ?' <A?<; <==' @' C<' A; 1F6<='9' C<' FCA; <;';<=G<F 1 ?' F1I16' <JBA61 (' C<' DA6A F<' 9' G E<;(' A @' C<' GBDCF' 61D<; 1<=(' A @' A ?;16 ' G; <= <@' A?A1 ='C<' 1 <;9<;< F<' 9' C<' CB;FC' 1 ' C<' A99A1;=' 9' C<' A <(' C<' - 1 ?' EA='9B66' 9' A P1< ' ';<FZ = ;BF ' BG ' C<1;' 6@' 9 B @A 1 =(' A='9A;' A='G ==1D6<(' C<' AB C ;1 ' 9' C<' C; <(' C<' A;1= F;AF (' A @' C<' F6<;? ' <' D<61<I<@' CA ' C1='EA=' C<' 6 ' . <A =' 9' =<FB;1 ?' C<' =A9< ' 9'#C<' . A;FC ' A @' 9' ;A F<'N A @' CA ' C<' EA=' 9B691661 ?' A' C 6 ' @B ' D ' A@0 IA F1 ?' EA;@=' 611=' < @(' EC16=' C<' 9A16<@' ' D=<; I<' C<' AD ==' EC1FC' G< <@' D<9 ;<' C1 .

C1='G;1 F<(' 1 ' C<' F B;=<' 9' A' 6 ?' FA;<<;(' CA@' D<< ' <' 9' C<' = . A66' B . D<;' 9' . < ' EC ='<' G 61 1FA6' FA;<<;' CA@' <I<;' IA;1<@(' A @' EC ' CA@' DB 'R I<; ' '=<6@ .'CA@' ;<A= ' ' ;<G; 91FC' C< . =<6I<=' E1 C' CAI1 ?' . A@<' F 0 F<==1 =' ' G1 1 =' EC1FC' C< ' @1@' ' =CA;<' C<' ;< FC' CA@' 6 ?' 9 ;<=<<' ' C<' = ; . =' 9' C<' <E' ;<1? N' A @' < ' =BFC' 1=' C<' G E<;' 9' ?;AF1 B='E ;@=' A @' G6<A=A ' . A <;=(' A @' =BFC' C<' 9AF161 ' E1 C' EC1FC' C<' ;< FC(' 9 ;?< 1 ?' 91;='1 . G;<==1 =(' 9;<JB< 6 'GA==' 9; .'A' 9<<61 ?' 9' G;<KB@1F<' ' <' 9' C G<(' CA ' C<' AFF<==1 ' 9' C<' <E' - 1 ?' A '91;='AG0 G<A;<@' G GB6A;' [' ' . ;<' CA6D<;@='33 C<' CA@' =A1@' ' C<' ?BA;@=' EC ' CA@' G;<I< <@' C<' F; E@' 9; .'AGG; AFC1 ?' C1 . ' C1='=A 1 ?(' A @' C<;=' <JBA66 'CAGG (?< C<;' E1 C' C<' =BGG;<==1 ' 9' C<' F< = ;=C1G(' E<;<' ;<0 ?A;@<@' A='9AI B;AD6<' . < =' A ' C<' F . . < F< . < ' 9' C<' ;<1? ' (B ' #IC'16=' ;<6<A=1 ?' C<' G;<==' 9; .' C<' F< = ;=C1G(CA;6<=' : ' @1@' ';<GB0 @1A <' C<' AF =' 9' A' 1 1= <;' EC .' 1 ' F @< . <@ (DB ' ' C<' F ;A; (AFF<G <@' C< . (D ' . A1 A1 1 ?' C1 .' 1 ' G E<;' C< ' C ='<' 9' C<' . @<

' '

=B991F1< '9 ;' C<' <= AD61=C . < ' 9' <E' <=' ' A A6 ? B=' G; G =1 1 ' CA@' D<< ' @1=FB==<@'1 ' C<' G;<I1 B=' <A;'1 ' 61<' =A . <' ' CA . D<;(' A @'1 'EA=' B991F1< '<'I1@< F<' 9' C<' G;<==B;<' <P<;F1=<@' ' C<' O I<; . < ' D ' C<' ;<61?1 B=' GA; (' C<' ;<A6' DK<F ' 9' EC1FC' EA=' ' <= AD61=C' A' G;<F<@< ' EC1FC' E B6@' =BD=<JB< 6 ' A66 E' C<' AB C ;1MA 1 (' D 'A' =1 . G6<' @<F;<<(' 9' F . . B 1 1<=' 9' . < (' A @' =A F 1 ' C<' <P1= < F<' 9' C<' F1< ' 9' C<' S<=B1 =(' A @' 9' C<' B . <; B=' <= AD61=C . < =' EC1FC' C< ' A6;<A@ ' G =0 =<==<@'1 ' B . <; B=' GA; =' 9' ;A F<' 1 '@<=G1 <' 9' C<' 6AE=' ' C<' F ;A; ' '6AE' ' C1=' =BDK<F ' F B6@' D<' . ;<' B G GB6A;' CA ' CA ' G;<=< <@' D ' C<' - <<G<;' 9' C<' <A6=' ' +A=JB1<;' G 1 <@' B ' 1 =' @A ?<;=' 1 ' =<I<;A6' ;< . A;>AD6<' =G<<FC<=(' A @' =BFF<<@<@'1 ' @<9<A 1 ?'1 'D ' . <A =' 9' A 'A . < @0 . < ' EC1FC' 9 ;DA@<' C<' <= AD61=C . < ' 9' A ' <E' 9< . A6<' F . . B 1 ' E1 C B ' C<' =A F 1 ' 9' C<' 6AE(' A @' EC1FC' EA=' A@ G <@' ' C1=' G; 0 G =A6' =BFF<<@<@' <' ' C<' 6AE' 9' =AF;16<?<(' EC1FC' GB 1=C<@' E1 C' @<A C' C<' C<9 ' 9' =AF;<@' I<==<6=' 9; .' FCB;FC<=(' A @' C GB 1C . .' C<' G; 9A A 1 ' 9' C<' F =<F;A <@' C = 'E1 C' C<' GB 1=C . < ' 1 961F <@' 'GA;;1F1@<=' C1=' 6AE(' C<' G; G =A6' 9' EC1FC' CA@' D<< ' <PAF <@' 9; .' C<' O I<; . < ' D ' C<' ?;<?A 1 (' A @' EC1FC' EA=' <I< ' . ;<' B Kb GB6A;' CA ' C<' G;<I1 B=' <(' EA=' =BGG ; <@' D ' '@<' (A6@' E1 C' A66 C<' I1 6< F<' 9' C< 6 ?1FA6' GA==1 (' A @' < F B <;<@' 1 ' <AFC' CA . D<;' B . <; B=' A @' <6 JB< 'A@I<;=A;1<=(' A @(' A . ?=' C<;=(' '@<' (; ?61<(' A KB1 A1=(' +A=JB1<;(' A @' + ; A61=(' 1 ' CA ' 9' C<' +<<;=(' A @' - <; 6 ' 6A;@'1 ' CA ' 9' C<' . . =' ' EA=' @< 1 . F<@' A=' A' ;< B; ' ' C<' DA;0 DA;1 1<=' 9' A C<;' G<;1 @(' A=' . 1P1 ?' BG' C< 6 ? ' E1 C' 6<?1=6A 1 (' A @' <=G<F1A66 'A=' D<1 ?' F ;A; ' ' C<' <JBA6' 61D<; ' 9' E ;=C1G' <= AD61=C<@' D ' C<' FCA; <;' C<' E ' CA . D<;=(' C E<I<;(' GA==<@' C<' 6AE(' CA ' 9' C<' +<<;=' =1 . G6 ' FB 1 ?' B ' C<' F6AB=<' EC1FC' 1 961F <@(' C<' A??;AIA <@' GB 1=C0 . < ' =B99<;<@' D ' GA;;1F1@<=(' . B 16A 1 'D<9 ;<' @<A C ' C<' 9 66 E1 ?' =<==1 'a *b' C<' O I<; . < 'G; G =<@' A' 6AE(' AFF ;@0 1 ?' 'EC1FC(' 1 '@<9AB6 ' 9' C<' 9 ; . A6' <PG;<==1 ' 9' A 'E1=C' ' C<' =BDK<F ' ' C<' GA;' 9' C<' <= A ;(' A' F =1@<;AD6<' G;1I16<?<' E B6@' D<' F;<A <@'1 ' 9AI B;' 9' G;1 . ?< 1 B;<' 1 ' C<' FA=<' 9' A66' <= A <=' GA 1 ?' 6A @' AP<=' 9' C;<<' C . @;<@' 9;A F=' ;' BG ' EA13@=' 9'XC<' AB C ;=' 9' C1=' =FC< . <' CA@' F 91 <@' C< . ' & ;1?11c 9Y =<6I<=' ' C<' G;<I< 1 ' 9' A ' 1 @<91 1 <' @1I1=1 (' EC1FC(' D ' ;<@BF1 ?' GA ;1 . 1A6' G ==<==1 =' ' @B=(' A=' 1 'E<;<(' 1=' @<= ;BF 1I<' ' C<' <P1= < F<' 9' 9A . 161<=' 9' 1 96B< F<N 19' C< ' CA@(' E1 C' C1=' DK<F &

@A $B+' B3' ,

EC1FC C< <E'?< <;A 1 B 9 ; B A <6 F B6@ 6 ' =<< A '1 GG ; B < AF ' 9 @<9<;< F EA;@= C< F6<;?K'

C< 1D<;A6 GA; '1 ' ;A F< CA@ = ' A9 <;EA;@= ' @<G6 ;< A'?;<A '6 == 1 ' C< @<A C 9 ' 'CB @;<@ C B=A @Q F1 1M< = 1 F6B@ ' S ? C< . = ' @1= 1 ?B1=C<@ . <;FCA = 6AE <;=' = 6@1<;= A @ D+@7>#B3

. < ' 9 6< <;= A < @<@ C1= 9B <;A6 A @ A@ G <@ C1= FC160

@;< '1 ' C< A . < 9 C< F B ; A ' C< G< ' . D 9 C<1;' 9A C<;C< . = ' <6 JB< ' GG < ' 9 C< 0 I<; . < ' C< B; ' ;<?A;@<@ C1= . A 19<= A 1 ' 9 9<<61 ? A= A =<@1 1 B= . I< . < A @ F 1 B<@ ' 9 66 E C< @A ?<; B= GA C A6 ? EC1FC 1 ' EA= B;?<@ D ' C< 1 . GA 1< ' E1=C<= 9 61 =< D ' EC . ' 1 ' EA= =B;; B @<@ EC< ' A 9 ; . 1@AD6< A@ I<;=A; ' 9 C< ?;<?A 1 ' A @ ' C< S<=B1 = =B@@< 6 'BGG<A;<@ ' F < @ E1 C C< . ' ' @< 6 =1<; A ' 6@ @<9< @<;' 9 C< A F1< ' 9<B@A6) 'CB) B+<#BA$@7 61D<; 1<= A @ C< G;<; ?A 1 I<= 9 C< A;1= F;AF @<' C@+BD+?@A <M@ '@AD$<A

B F<@ C< IA= ' ;?A 1MA 1 ' 9 C< ?;<?A 1 ' A=

@A ?<; B= ' C< <P1= < F< 9 ;<61?1 ' 1 ' ;A F< A @ ' C< =A9< ' 9 C< A < A @ ' @< ;A ==1 B= CA I1 ? 6< ' 9A66 A ' C< ;1DB < A ' AI EA6 9 C< <P1= < F< 9 S<=B1 = 1 ' C< >1 ?@ . ' @< 6 =1<;' AGG<A6<@ ' C< 6AE= A?A1 = ' C<1;' ;< <= AD61=C . < '1 ' ;A F< 1 ' C< A6 B; ' 9 +A;1= ' C< 6A <;' CA I1 ? @<F6A;<@ 1 =<69'1 F . G<0 < ' 'G; F<<@ A?A1 = ' C<; ' @< 6 =1<;' 1 . . <@1A <6 'AGG61<@ ' C< CA . D<;' 9 +<<;=' EC1FC A ' C< =B??<= 1 ' 9 ' @< + ; A61=' ;<F<1 I<@ C< G< 1 1 ' A= 9A;' A= 1 ' ;<9<;;<@ ' C< <P1= < F< 1 ' C< >1 ?@ . ' 9 A = F1< ' ' 6<?A66 'AB C ;1M<@ A @ ;<9<;;<@ 1 ' ' C< G;<=1@< ' 9 C< 'F B F16 ' G ' C1= C< 0 I<; . < ' ;<= 6 I<@ ' =CAF>6< C< G;<=' EC1FC @< B F<@ C< S<=B1 = ' C< F B ; A @ ' = 196< C< GG =1 1 '1 ' C< CA . D<;' 9 +<<;=' EC1FC 1 I ><@ A?A1 = '1 ' C< ;1? B;= 9 C< 6AE ' <99<F ' 1 = DK<F =' 1 ' EA= E' <F<==A; ' 9 ;' C< 0 I<; . < ' ' ;<@BF< C< B . D<;' 9 <6<F ;= EC ' E<;< . = '612C 6 ' AP<@' 4 7BLBA@C BM>B&@ A @ EC ' D<6 ?<@ ' C< F6A==<= . A ' A AFC<@ ' C< 61D<; A6 1< KB1 E FAB=< A @ 1 ' AFF ;@1 ?6 ' G;<=< <@ A G; G =1 1 ' 9 ;' C< ;<@BF 1 ' 9 C< 6A @ AP EC1FC EA= . = ' I<C< . < 6 ' GG =<@ D ' - <; 66A;@ ' [C1= ;<@BF 1 ' C< =A1@ [E B6@ @1 . 1 1=61 D ' . A ' ?G#<FC 9 BK@70 C B=A @= C< B . D<;' 9 <6<F ;= A @ <=G<F1A66 ' 9 C =< ?Z >7C' EC D<1 ? . = '1 ' F AF ' E1 C C< E ;>1 ? F6A==<= G6AF< C< 6<F 1 I< CA . D<;' 1 ' ;<6A 1 ' A @ CA; . ' E1 C C< . A==<= 9 C< G< G6<

C B6@' =BFC' ;<6A 1 =' F 1 B<(' A @' C<' <6<F 1I<' G E<;' D<' . ;<' A @' . ;<' AD= ;D<@' D ' C<' BGG<;' F6A==<=(' C<' ;<G;<=< A 1I<' FCA;AF <;' 9' C<' 0 I<; 0 . < ' E B6@' D<' @<= ; <@(' A @' C<' CA . D<;' E B6@' ' 6 ?<;' D<' A C1 ?' DB ' A' =< A <(' EC1FC' E B6@' ' > E' +;A F<(' A @' EC1FC' ;A F<' E B6@' ' ;<F ? 1=< `

' _ C<' =<==1 ' 9' *' EA=' F6 =<@' 1 ' SB6 ' +BD61F' G1 1 (' 1;;1 A <@' D ' = ' . A ' . <A=B;<=' @1F A <@' D ' A' G 61F ' F ;A; ' ' C<' A 1 A6' 9<<61 ?' A @' =BD=<; I1< ' ' C<' ?;<?A 1 ' A @' C<' S<=B1 =(' DB;= ' 9 ; C' 1 ' F . G6A1 =' A @' . < AF<=' ; .' C1=' G; 9 B @' @1=F < (' EC1FC' EA=' 1 ' 1 =<69' A '?;<A ' <I16(' C<;<' =G; I ?' A6= (' AI' C<' F =<JB< F<' 9' A' A B;A6' ;<AF 1 ' 9' C<' GBD61F' . 1 @(' A ' ; . 9 ; B A <' < 0 @< F ' ' F 9 B @' A6 ' A @' C<' O I<; . < '1 ' <' F . . ' D6A . <'N A' 9A A6' @1=G =1 1 ' EC1FC' 1=' DB ' ' ;<A@16 ' ;<F ? 1=AD6<' 1 ' . A 'GBD61FA0 1 =' 9' C<' G<;1 @' C<' ?;<A ' GC16 = GC1FA6' A @'61 <;A; ' . I< . < 'EC1FC' F . . < F<@' B @<;' C<' . G1;<(' ' C<' <' CA @(' 1 ' C<' 91;=' E ;>=' 9' A1 <' @<' (1;A ' A @' <; A;@(' A @' ' C<' C<;' 1 ' C =<' 9' CT <ABD';1A @' A @' A@A . <' @<' Aw6(' CA@' ;<F<1I<@' 9; .' C<' =C F>' 9' G 61 1FA6' G1 1 =' 1 ' C<' 9 66 E1 ?' G<;1 @' A' G E<;9B6' 1 . GB6=<'N A @' C<' D;1661A F ' 9' C<' 61 <;A B;<' 9' C<' <= ;AN 1 ' E B6@' A6 <' A AFC' ' 1 ' A' =B991F1< ' =CA;<' 9' ?6 ; ' (B ' A=' 1 . <' E< ' ' C<' G; @BF 1 =' 9' C<' ;A@1 1 A6' A61= ' A @' A C 61F' =FC 6' D<FA . <' ;A;<;' A @' ;A;<;(' EC16= ' C =<' 9' C<' 1D<;A6' =FC 6' . B6 1G61<@' A @' 1 B @A <@' ;A F<' ' A66' C<' =G<<FC<=(' 1 ' A ' C<' E;1 1 ?=' 9' C<' 1D<;A6' = 1 B 1 A61= =(' A' ;1DB <' 9' G;A1=<' EA=' GA1@' ' C<' FCA; <;' A @' ' C<' 9;<<' 1 = 1 B 1 =' 9' ?6A @(' A @' ' C<' ;<=G<F ' @B<' ' A 1 A6' ;1?C =' C<;<' EA=' CB=' 9 ; . <@' A' GBD61F' 9<<61 ?' EC1FC' G E<;9B66 ' 1 =G1;<@' C<' < . 1 < ' G; 9<== ;=' 9' C99' ;D <(' C<' ?;<A ' GBD61F1= =(' C<' ; . A F<' E;1 <;=(' A @' C<' G < =(' A @' EC1FC

B#$<$?>#' 6< ' @<' <J<=' 9 C<' D+$GB7A$<$@A

EA=' C<' 619< D6 @' 9' . A ' E ;>=' A @' G<;1 @1FA6' GBD61FA . <;A B A @' 1 =(' A . ?=' EC1FC' E<;<' @1= 1 ?B1=C<@' RR C<' F F6 ' G=<@1A' 9' C<' 1 < << C' < B; (' [' C<' < = ;(' A @' [' C<' O6 D< Q' C<' 6A <;' <=G<F1A66 ' A ;AF <@' A < 1 (' A @' F B <@' C<' % F0 ;1 A1;<=' A . ?=' 1 =' . =' < . 1 < ' F ;1DB ;=' C<=<' K B; A6=' 1 =<; <@' 1 ' C<1;' F 6B . =' D;1661A ' A; 1F6<=(' I<; ' 61D<;A6' 1 ' <(' A @' F A1 1 ?' I<; ' <6<IA <@' I1<E=' E1 C' ;<=G<F ' ' G 61 1FA6' . A <;=(' A@ . 1 1= ;A 1I<' A @' 91 A F1A6(' A @' @1@' ' C< ' 9 ;<=<<' CA ' C< ' E B6@' = ' = ' CAI<' ' AGG6 ' C<1;' E ' C< ;1<=' ' G;AF 1F<(' A @' ' A =E<;' ' ;A F<' 9 ;' C<1;' AF = (B ' EC16= ' 1 ' C<=<' G; @BF 1 =(' = . <' 9' EC1FC' E<;<' KB= 6 ' F<6<D;A <@

8" ^ ‘ # ; ‘ /

_EC16=’ C<;=’E<;<’ E ; C ’ 9’ ;<=G<F ’ 9 ;’ IA;1 B=’ ;<A= =‘ <6<IA <@‘C 6@‘ A @’ . ;<’ ;’ 6<=’A@I< B; B=’@ F ;1 <=’E<;<’ A== F1A <@’ E1 C’ A’ =< 1 . < ’ 9’ ;<=G<F ’ 9 ;’ C<’ . A;FC ‘ C<’ 6A <;’ EA=’ A AF><@’ A ’ 1 =’ 9 B @A 1 =’D ’ C<;’ E ;>=’ EC1FC’ E<;<’ I<; ’ G GB6A;‘ A @ EC1FC’ E<;<’ 9;AB?C ’ E1 C’ G; 0 9 B @’ 1; ‘ = = < . A 1F’ D1 <; <==‘ A @’ A66’ C<’ G;<= 1?<’ 9’ A6< ’ . ?= ’ C<=<’ _E;1 1 ?=‘ = . <’ 9’ EC1FC’ CA@’ C<’ 1 . G ; A F<’ 9’ G 61 1FA6’ 9AF =&‘ C<’ . = ’ =G >< ’ 9’ A @’ E1@<6 ’ ;<A@’ E<;<’ C<’ 9A . B=’ GA . GC6< =’ 9’ +AB6 ’ B1=’ B;1<;‘ A @’ = . <’ 9’ C<’ = ?=’ 9’ C<’ A 1 A6’ G < ’ (W;A ?<; ’ D B ’ C<’ =A . <’ 1 . <’ E ’ . < ’ 9’ ;A;<’ 1 <66<F ‘ ’ C1<;=’ A @’ 1? < ‘ AGG<A;<@’ 1 ’ C<’ 61 <;A; ’ E ;6@‘ A @’ 9 B @<@’ 1 ’ ;A F<’ A’ <E’ 61 <;A; ’ =FC 6’ C< ’ CA@’ @<I <@’ C< . =<6I<=’ ’ C<’ . 1==1 ’ 9’ <6<IA 1 ?’ C<’ FCA;AF <;’ 9’ C<’ ;< FC’ <I 6B 1 ’D ’ <PFB=1 ?’ C<’ 9AB6 =’ 9’ CA ’ G<;1 @‘ D ’ C<’ A1@’ 9’ A’ @ F ;1 <’ A=’ 9A6=<’ A=’ 1 ’ EA=‘ @A ?<; B=‘ CA ’ 9’ 9 A61= . ’ C<1;’ E ;>=‘ EC1FC’ C< ’ CAI<’ C< . =<6I<=’ =BD=<JB< 6 ’ KB@1F1 B=6 ’ . @10 91<@‘ E<;<’ ;<F<1I<@’ A ’ 91;=’ ’ E1 C’ < CB=1A= . 1’ D ’ A’ GBD61F’ A 1 . A <@’ D ’ A’ C B=A @’ IA;1 B=’ GA==1 =’ C< ’ I<;= <GG<@’ C<1;’ E ’ DK<F ‘ I @’ G E<;9B66 ’ A==1= <@’ ’ ;<I1I<’ 1 ’ ;A F<’ C<’ <GBD61FA ’ GA; ’ N A’ 9 ; . 10 @AD6<’ GCA .’ EC1FC’ EA=’ = ’ ’ = A @’ 9AF<’ ’ 9AF<’ 1 ’ C<’ G 61 1FA6’ A;< A’ _E1 C’ C =<’ EC ‘ E1 C B ’ 1 < @1 ?’ ’ @ ’ = ‘ CA@’ 1 I ><@’ 1 ’ . <’ G1A =‘ 1 ’ C<’ 91;= ’ ;A >’ 9’ EC .’ E<;<’ A1 ’ 1 . ’ A @’ CA;6<=’ B; ;1<;‘ @;<A . ’ A ’ C1=’ G<;1 @’ 9’ C<’ ;<F = ;BF 1 ’ 9’ C<’ = F1A6’ <@191F<’ ’ G;1 F1G6<=’ A=’ ;< . <’ 9; .’ C<’ ?< B1 <’ G;1 F1G6<=’ 9’ C;1= 1N . 16 ’ A=’ 9; .’ C<’ 6AE=’ =A F 1 <@’ D ’ C<’ = B@ ’ 9’ CB . A ’ A B;<’ A @’ C<’ <PG<;1< F<’ 9’ A?<=’ C<1;’ @ F ;1 <=’ =6 E6 ’ G< < ;A <@’ C<’ . A==<=‘ A @’ 9 B @’ 9AI B;’ ’ E1 C’ . 1 @=’ EC1FC’ 1 ’ C<;’ 1 . <=’ E B6@’ 6 ’ CAI<’ ;<A <@’ C< . ’ E1 61’ 1 @199<;< F<’ ;’ @1=@A1 ’ ’ E B6@’ D<’ B KB=’ ’ C 6@’ C<’ O I<; . < ’ 9’ C<’ <= ;A 1 ’ ;<=G =1D6<’ 9 ;’ C<’ . A 19<= A 1 ’ 9’ C<=<’ 1@<A=’ Y DB ‘1 ’ . A ’ 9A1;6 ’ D<’ =A1@‘ CA ’ C<’ <P ;< . <’ 1; ;1 A 1 ’ FAB=<@’ A . ?= ’ A6 . = ’ A66’ F6A==<=’ D ’ A’ 6 ?’ =<;1<=’ 9’ 1 . G;B@< ’ A @’ B G GB6A;’ AF =‘ @1=G =<@’ A ’ I<; <PF1 <@’ A @’ GA==1 A <’ GBD61F’ ’ AFF<G ’ D61 @6 ’ ’ . A ’ E;1 1 ?=’ EC =<’ 6 ’ 1 6<’ ’ 9AI B;’ F =1= <@’ 1 ’ A ’ A;@< ’ A @’ 1; ;1 A <@’ GG =1 1 ’ ’ C<’ . 1 1= <;1A6’ G 61F

’ C<’ . <A 1 . <’ ’ @<’ 166]6<‘ 1 ’ =G1 <’ 9’ C1=’ 1 F;<A=1 ?’ B G GB6A;1 ‘ G<;=1= <@’ 1 ’ F61 ?1 ?’ ’ G E<;‘ A @’ C1=’ A . D1 1 ’ D<FA . <’ @A ’ D ’ @A ’ ;< I1 6< ’ A @’ K<A6 B=’ %< <; . 1 <@’ ’ D<’ C<’ = 6<’ . A= <;’ 9’ C<’ G =1 1 ‘ C<’ CA@’ =BFF<==1I<6 ’ ;< . I<@’ 9; .’ G E<;’ C<’ . =’ < . 1 < ’ . < ‘ ’ D<FAM<=‘ A . W‘ 1FC<61<B‘ A @’ CT <ABD;1A @‘ A66’ 9’ EC .’ CA@’ G E<;9B6

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9;1< @=1 C CA . D<; 9%<GB 1<= A C =A . W 1 . = @A6 9 9; . C <P ;< . . < . D<;= 9 C 6@ 1?C A @D C1=<PF6B=1I<A @G<;= A6 G 61F C B . D<; 9 C1= GG < =1 F;<A=<@ 1 A66 C C CA@6 = C< . AK ;1 1 C CA . D<; 9 +<<;=A @A6;<A@ 9 B @C1 . =<69 I<; E<A> 1 CA 9 C %<GB 1<= ;<= 6I<@ = ;1><1 C G<;= 9 C G;<== C . =9 ; . 1@AD6 GG < 9 C1= G E<;A @A C F . < F< . < 9 C 9 66 E1 ?=<==1 + < ; < C C - <<G<; 9 C <A6=G1 <=< <@ C< %<GB 1<= A 6AE C DK<F 9 EC1FC EA= ;<= ;A1 C 61D<; 9 C< G;<== E1 C1 C A; ; E<= 61 . 1 =1 ;<=G<F GA . GC6< = A @D >= A @

7BLBSC#>S 196 1 A6 ?< C<;K ;<=G<F K B; A6= 6A @G<;1 @1FA6= D<; 9 1 G; G =<@ 6AE <PF1 <@ A A6 . = B 1I<;=A6 9<<61 ? 9

L7@A> 1 @1? A 1 A @A C =B??<= 1 9 CA;6<= AF;< <66<& EC EA=M<A6 B=6 =BGG ; <@D Ci <ABD;1A @ < . <;F1<; S B 1FCAB@& S =<GC %; M 6<PA @<; %BIA6 A @ 166< . A1 1 AG

7B<@A<B3<M@ 7@+?M ?>C@ ; K G 1 <@A F . . 1 < 9 1 = . < . D<;= @;AE BG A G< 1 1 C - 1 ?9 ; C E1 C@;AEA6 9 C G; K<F C1= G< 10 1 CA;6<= : ;<9B=<@ ;<F<1I<A @ ;<G61<@ 1 D C 1 961F 1 9 GB 1=C . < =N @<G;1I1 ? 166< . A1 AF;< <66<A @ 1FCAB@ 9 C<1; 961F<= C 6AE EC1FC EA= A@ G <@D C CA . D<; 9 %<GB 1<= EA= I<C< . < 6 GG =<@1 CA 9 C +<<;= C AD1 <9 ;<=AE CA <I< 19 C1= CA . D<; AFF<G <@ 1 1 E B6@A 6<A= ;<K<F 1 = . =;1? ; B= F6AB=<= A @ =AI<@ 1 9; . = @A ?<; B= A G<;A 1 D E1 C@;AE0 1 ?1

C1= <E= EA= ;<F<1I<@ E1 C AFF6A . A 1 = D C G GB6AF< 9 +A;1= A6;<A@ A G;< A 9 ; . 1@AD6 <PF1 < . < C = . G . = 9

M@BLLBA$<$B+ J@?>;@ @+@7B 77@37> >J#@ EC1FC E<; @1=G6A <@1 C . 1@= 9, f 5 A @ G GB6A; F;1<= ;<=C A @1;;<9;A?AD6 =1? = 9 C ?< <;A6 9<<61 ?E<; . A 19<= <@ <I<; @A A @1 EA= 1 . G ==1D6 @ BD C =1 F<;1 ; C G E<; 9 A GBD61F G1 1 EC1FC EA= =BGG ; <@D A66 C ?;<A <= A @ . = <= << . <@D @1<= 1 C A < C G<<;A?< C C1?C . A?1= ;AF C = 1 B < C . 1 1= ; A @ <I< C E1=<= A @ . = < . 1 < . < 9 C A61= GA; C<; EA= A =G<F1<= 9 1 =A 1 1 C ;<9B=A6 ;<F ? 1=< A C @A ?<; = 9 C F B;= EC1FC C 0 I<; . < CA@ < <;<@ EC< C<; E<; =<< 1 C ;A >= 9 C GG =1 1 A66 C ?;<A 1 F ;G ;A <@D @1<= EC1FC A; C =<; IA 1I <6< . < = 9 = A <= CA 9AF D<1 ?1 1 =<69 A 1 9A661D6 =1? CA A ;<I 6B 1 EA= 1 . . 1 < @ < C AD1 < G<;=<I<;<@

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) $+$A<@7AE , 5

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@< <; . 1 <@' ' D;AI<' <I<; C1 ?&" A=' C B?C' = ;BF>' D ' D61 @ <==' A @' 9A=F1 A <@' D ' C<' @<F<G 1I<' G;<= 1?<' 9'A'9AF 1 1 B=' GA;61A . < A; ' . AK ;1 &' C<' ;<=B6 ' 9' C<' @ BD6<' I <&' A @' ; ' 9; .' ;A F<' D ' A ' P . 61 . 1 <@' A@ . 1 1= ;A 1I<' F< ;A61MA 1

CA;6<=' : &' EC16= ' CB=' GG =1 ?' <I<; ' 61D<;A6' 9<<61 ?&' EA=' <I<;0 C<6<==' A P1 B=' CA ' C<' ;< FC' =C B6@' D<' G<;= A66 ' A AFC<@' ' C1 . ' <' CA@' 6 ?' D<< ' CB; ' A ' C<' =16< F<' 9' C<' G< G6<' EC< ' C<' GA==<@' A . ?= ' C< . &' A @' A9 <;' CAI1 ?' E1 <==<@&' C<' < CB=1A= . ' 9' C<' +A;10 =1A =' ' C<' FFA=1 ' 9' C<' ' 31 C@;AEA6' 9' C<' 6AE' ;<=G<F 1 ?' C<' G;<==& C<' ;@;<;<@' A' ?< <;A6' ;<I1<E' 9' C<' A 1 A6' 0BA;@' 9 ;' C< 9 66 E . ?' B @A 8 ' ' CA ' @A ' C<' EC 6<' 9' +A;1=' G; ' F9<<@<@' ' C<' CA . G' @<' A;=& EC<;<' =1P ' C B=A @' . < ' <;<' B @<;' A; . =' C<' - 1 ?' GA==<@' C; B?C' C<' ;A >=' A @' AGG<A;<@' =A 1=91<@' E1 C' C<' . A <;' 1 ' EC1FC' C<' EA=' ;<F<1I<@& DB ' 1 ' A6 . = ' <I<; ' 1 = A F<' C<' F; ' 9' [' 1I<' 6<' ; 1' zQ EA=' . 1 ?6<@' E1 C' A' =C B ' 9' C = 161 ' A?A1 = ' C<' . 1 1= <;= ' . <' I 1F<=' <I< ' 1 =B6 <@' C<' G;1 F<==<=' G;<=< ' A ' C<' ;<I1< I& A @' EC16= ' @<9161 ?' D<9 ;<' C<' 1 1= <;' 9' 1 A F<& A' DA A61 ' B <;<@' C;<A < 1 ?' 1 . G;<FA 1 =' C<' - 1 ?' CA@' A6;<A@ ' B <;<@' = . <' ?;AF1 B=' E ;@=' EC< & A ' C<' 1 = 1?A 1 ' 9' C<' G;1 F<==<=' A @' ' @<' 166]6<' A @' ;D1];<& C<' 9<6 " D B @' ' AI< ?<' C<' 99< @<@' . < . D<;=' 9' C1=' 9A . 16 ' A @' C1=' B F16' N DB ' C<' @1@' ' @1= 1 ?B1=C' C<' 1 F< ' 9; .' C<' ?B16 & A @' F 9 B @<@' C< . ' 1 ' C<' =A . <' GB 1=C . < ' +A;1=' 6<A; ' ' C<' 9 66 E1 ?' @A ' CA ' 1 =' A 1 A6' 0BA;@' EA=' @1== 6I<@' C< 1D<;A6' G;<==' A @' C<' GG =1 1 ' K B; A6=' I<C< . < 6 ' ;<G; AFC<@' C<' +;<=1@< ' 9' C<' B F16' E1 C' D<1 ?' C<' AB C ;' 9' C1=' 1 F =1@<;A <' AF ' 9' I< ?<A F<& A @' 1 . . <@1A <6 ' A9 <;' C<' =<==1 ' C<' F< = ;=C1G' EA=' A;D10 ;A;16 ' ;< <= AD61=C<@' ' = ; ?' GG =1 1 ' A?A1 = ' C<' @<F;<<' EC1FC' = ' AD;BG 6 ' @1== 6I<@' C<' A 1 A6' 0BA;@' A; =<' 1 ' C<' CA . D<;' 9' +<<;=& A @' AGG<A;<@' A6= ' 1 ' C<' CA . D<;' 9' %<GB 1<=& EC<;<' C<' . 1 ;1 'C = 16<' ' C<' 1 1= <;=' 1 F;<A=<@' <I<; ' @A ' 1 ' = ;< ? C ' 6;<A@ ' . A ' . < . 0 D<;=' D<6 ?1 ?' ' <I<; ' GA; ' CA@' @<F6A;<@' CA ' A6 C B?C' A' ;<F< ' 6AE' CA@' =A F 1 <@' C<' =<G < 1A61 ' 9' C<' 6<?1=6A B;<& @1<' ;B=' C< ' CA@' ;<0 F<1I<@' A ' C<' CA @=' 9' C<' <6<F ;=4' EA=' 6 ' 9 ;' 91I<' <A;=& A @' CA & F =<JB< 6 & C< ' F B6@' ' ;< A1 ' C<1;' =<A =' 9 ;' A ' 6 ?<;' 1 . <' 1 ' C<' FCA . D<;' ' @]' 166]6<' E& C<;<9 ;<& ;<= 6I<@' ' =<FB;<' C<' @B;A 1 ' 9' C1=' G E<;' A @' C<" <P<FB 1 ' 9' C1=' G6A =' D ' C<' <6<F 1 ' 9' A' <E' =<G < 1A6' GA;61A . < ' EC1FC' =C B6@' D<' . ;<' @ F16<' CA ' C<

! ! ' ! /' 0 - " ' 0 ! 0 ' : !>' ' 8 * c '

<P1= 1 ?' <' <' F =B6 <@' C<' G;<9<F =' QE1 C' ;<=G<F ' ' C<' = A <' 9' GBD61F' 9<<61 ?' 1 ' C<1;' @<GA; . < =(' A @' ;<F<1 I<@' 9; .' C< .' F . G6A1=A ' A =E<;=' EC1FC' E<;<' 1 ' . A ' FA=<=' 1 <PAF (' DB ' EC1FC' 1 ' . =' FA=<=' A==B;<@' C1 .' CA ' C<' ;<=B6 =' 9' C<' <6<F 1 =' E B6@' D<' 9AI B;AD6<' ' C1=' G6A =' <6 1 ?' ' C<=<' A==B;A F<=(' C<' ' 6 ?<;' C<=1 A <@(' A @' 1 '

I< . D<;(' 2(' AGG<A;<@' C<' @<F;<<' D ' EC1FC' C<' CA . D<;' 9'%<GB 1<=' EA=' @1== 6I<@ ' C<' 6<F ;A6' 66<?<=' E<;< F I ><@(' A @' =<I< =1P' G<<;=' F;<A <@(' . =' 9' C<' 6A <;' D<1 ?' . < . D<;=' 9' C<' . AK ;1 ' 9' C<' 6@' CA . D<;' A @' 6A;?<' 6A @<@' G; G;1< ;=' EC =<' ?;<A ' 9 ; B <=' ;<F . . < @<@' 61< .' ' C<' A6' 9AI B;

$3#AB#><$B+' B3 C<' CA .D<;' B3' @LD<$@A ' 7@>0 B+B3' @@7A '

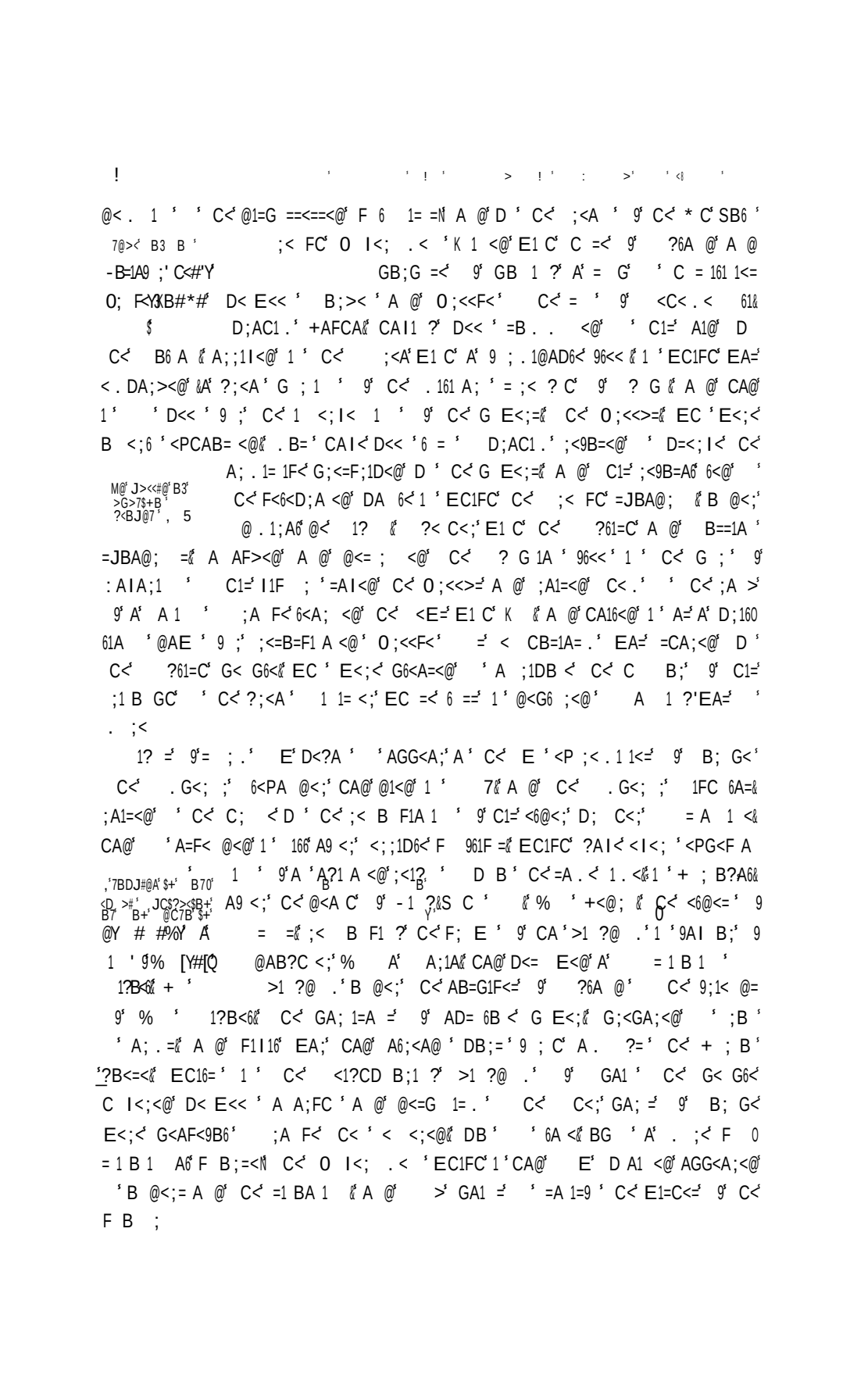
C<' AD1 <' CA@' I<;= <GG<@' C<' . A;>(' A @' C<' C B;' CA@' A; ;1I<@' 1 ' EC1FC' 1 ' E B6@' CAI<' ' F . <' ' A' =<;1 B=' AFF B ' E1 C' GBD61F' G1 1 ' C<;<' CA@' A6;<A@ ' D<< ' 9 ; . <@(' =1 F<' = . <' 1 . <(' E1 C' A' I1<E' ' 61<' AGG; AFC1 ?' ?< <;A6' <6<F 1 =(' A' = F1< ' EC1FC' D<FA . <' F<6<D;A <@' B @<;' C]# A . <' 9' C<' = F1< ' <6G' B;=<69' A @' <AI< ' . 16' <6G' B(' 9' EC1FC' . A ' < . 1 < ' . < . D<;=' 9' C<' 1D<;A6' GA; (' A @' A . ?=' C<;=' ' OB1M (' E<;<' C<' . =' AF 1I<' 9 B @<;=' =' DK<F ' EA=' ' G;<I< ' <6<F ;A6' 9;AB@=(' ' EA FC' C<' <6<F ;A6' 61= =(' A @' ' = 1 . B6A <' C<' M<A6' 9' C =<' <6<F ;=' EC ' D<6 ?<@' ' C<' 1D<;A6' GA; ' =' <99 ; =' E<;<' G E<;0 9B66 ' =BGG ; <@' D ' C<' G<;1 @1FA6' G;<==(' EC1FC(' AFF ;@1 ?' ' 6AE(' D<FA . <' ;<6<A=<@' 9; .' A66' 1 =' =CAF>6<=' A=' = ' A=' C<' <6<F 1I<' CA . D<;' EA=' @1=0 = 6I<@ ' C;<<' 1 96B< 1A6' K B; A6= , C<' /@ !' C<' + !' A @' C<' + ' = Y , ' EA?<@' A' @<=G<;A <' EA;' A?A1 =' C<' AD1 < (' EC16=' A' . B6 1 B@<' 9' C<;' GBD61FA 1 =' A ' +A;1=' A @' 1 ' C<' @<GA; . < =' D<JDS<' B3' E<;<' C<' GA==1 A <' ;?A =' 9' C<' ?< <;A6' 9<<61 ?' +BD61F' 11D<;1@ `' G1 1 (' = ' 6 ?' . 1=F = ;B<@(' F;B=C<@(' A @' D;AI<@(' E <$B ; $' , 5' <PG6 @<@' =1 . B6 A < B=6 ' 1 ' <I<; ' GA; ' 9' C<' >1 ?@ . ' = 9 ;F<' EA=' 1; ;<=1= 1D6<(' A @' 1 ' ;1B . GC<@(' C1=' 1 . <(' I<;' C<' A@ . 1 1= ;A 1I<' F< ;A61MA 1 ' 66' C<' . < . D<;=' 9' C<' <9 ' EC ' CA@' D<< ' ;<K<F <@' 1 ' C<' G;<F<@1 ?' <6<F 1 ' ;<AGG<A;<@(' A @' E<;<' =< ' DAF>' ' C<' CA . D<;' D ' C<' A;; @1==< . < ' F 66<?<=' A ' 9' C< .' ;< B; <@' ' 1 ' @<<G6 ' 1; ;1 A <@(' @1=G =<@' ' . A><' C<' . =' I1 6< ' ;<=1= A F<' ' C<' G 61F ' 9' C<' AD1 < (

I' M@' /@ ' S>A' ?B+CD?<@C' ><' <M$A' L@7$BC' JK' $<A' L7BL7$@<B7A ' <M@' J7B<M@7A' @7<$+ ' S$<M' <M@' >AA$A<>+?@' B3' @aD@<' B33 ; >+ ' >#G>+CK ' >+C' M><@>DJ7$>+C ' M@' L7$+?$L>#' S7$<@7A' B+' <M@' + ' S@7@(' 'BDK ' 7+>DC ' U?' ' C$A<$+ D$AM@C' LDJ#$?$A<' +> ; @C' Mm<@#>$+' @C$<@C' <M@' + ' 0

A @' E1 C' C1=' DK<F ' 'A@ G ' . <A=B;<=' 61 6<' F . GA 1D6<' E1 C' C<' <F<==10 1<=' 9' C<' . . < 'A @' C<' @1F A <=' 9' #I#=@ . ' C<' FC 1F<' 9' C<' @<0 GA; . < A6' F 66<?<=' EA=' 1 '?< <;A6' 9AI B;AD6<' ' C<' A61= 'GA; ' EC1FC' CA@';<F< 6 'D<F . <' @ .1 A '1 ' C<' D = .' 9' C<' CA . D<;'Ñ DB ' <I<;0 C<6<==' A '1 . G =1 ?' F = 1 B 1 A6' . AK ;1 'CA@'1==B<@' 9; .' C<' <6<F ;A6' 1; ' 'EA=' 1 'IA1 ' CA ' '@<' 166]6<' = 166' < @<AI B;<@' ';< A1 ' 991F<' D '=AF;191F1 ?' C =<' 9' C1=' F 66<A?B<=' EC ' E<;<4' C<' . = ' F . G; . 1=<@'Ñ A @' 1 ' IA1 ' CA ' C<' <PCAB= <@' <I<; ' =G<F1<=' 9' F . D1 A 1 ' 9 ;' C<' 9 ; . A 1 ' 9' A' B F16' 1 ' CA; . ' E1 C' C<' <E' CA . D<;' A @' 111 EC1FC' A ' C<' =A . <' 1 . <' C<' . 1?C ' C1 . =<69' CAI<' A' G6AF<' < EA=' F . G<66<@' A '6< ? C' ' F 9<==' C1=' G E<;6<== <==' A @ 9<66' D<9 ;<' CA ' GBD61F' G1 1 ' EC1FC' C<' CA@' 'CAB?C 16 @1=@A1 <@ >##B3<M@ $) F

C<' B F ' 9' EC1FC' C<' EA=' A' . < . D<;' CA@' @B;1 ?' C<' A@ . 1 1= ;A 1 ' 9'91I<' <A;=3@B;A 1 ' 1 KB;<@' B . <; B=' 1 <;<= =' @<A;' ' C<' . 1@@6<' F6A==<=' Ñ A @' EC16= ' 1 ' @A 'D ' @A 'A; B=<@' 9;<=C' A @' 9 ; . 1@AD6<' CA ;<@=' A?A1 = ' C<' 0 I<; . < ' 1 ' A6= ' @A 'D ' @A ' @<G;1I<@' C<' G< G6<' 9' = . <' 9' C<1;' A B;A6' = ;< ? C' A @' . <A =' 9' ;<=1= 1 ?' AB C ;1 ' (' ;A =9 ; . 1 ?' 61<' 0 I<; . < ' 991F1A6=' 1 ' D61 @' 1 = ;B . < =' 9' <6<F ;A6' . A <BI;<=' 1 ' 6 E<;<@' C< . ' 1 ' GBD61F' <= 1 . A 1 ' ' 99< @<@' C<' A; . 'D ' C<' 9AI B;' 1 '@1=G6A <@' EA;@=' C =<' EC ' =G<FB6A <@' ';<61?1 B=' F I<;=1 =' 1 ' C<' ;<?1 . < =' Ñ A @' A61< A <@' C<' A6' B; =' D 'F @< . 1 ?' C<1;'KB@? . < =' EC16= ' 1 ' @1=?B= <@' C<' 1I<;=1 ' D ' F6 =1 ?' C<' ; . A6' =FC 6=' A @' =B=G< @1 ?' C<' F B;=<' 9' 6<F B;<=' @<61I<;<@' D ' C<' E ' 166B= ;1 B=' G; 0 9<== ;=' 9' OB1M ' A @' B=1 ' EC =<' 6<A; <@' <AFC1 ?=' A ' CA ' 1 . <' =CA;<@' E1 C' C<' <6 JB< '6<== =' 9' ' 6< . A1 ' C<' A < 1 ' 9'= B@1 B=' B C' 1 A66 ' C<' 0 I<; . < ' D '@1== 6I1 ?' C<' A 1 A6' OBA;@' 9' +A;1=' A ' A' 1 . <' EC< ' C<' 1 = 1 B 1 ' EA=' = 1 ' I<; 'G GB6A;' A; B=<@' A ' < < . ' '1 =<69'1 ' <I<; ' 9A . 16 '1 ' C<' FAG1 A6

' 9<E' . ;<' =A 1=9AF ; ' . <A=B;<=' C E<I<;' E<;<' <99<F <@' D ' C< 1 1= ; '1 '1 =' 91 A F1A6' G<;A 1 =' A @' 1 =' 9 ;<1? 'G 61F ' ' @<' 166]6< 9AI B;<@' C<' 1 F;<A=1 ?' F;<@1 'EC1FC' ;A F<' E' D<?A ' ' < K ' C< <99 ; =' 9'1 =' . A B9AF B;1 ?' 1 @B= ; ' A @' 1 =' ;A@<' E1 C' C<;' A 1 =' A=' 'AD6<' A=' 1 ' @<=1;<@' '9 66 E' C<' <PA . G6<' 9' ?6A @' D ' FAB=1 ? C<' ;<F ?' 1 1 'D,,' ;A F<' 9' C<' 1 @<G< @< F<' 9' C<' GA 1=C' ' +C@L@+C@+?@' B3 F 6 1<=' DB '1 ' A '6<A= ' < . A F1GA <@' C<' 6@' F 6 ' 9' A1 7@?B +$@@C' JK % . 1 ? ' F @1 1 ' 9' C<' GA . < ' 9'A' F =1@<;AD6<' 1



C< <E' F B F16 EA=' 9 ; . <@ ' C< C SA BA; & & A @ F =1= <@ @ '@< A; 1? AF& + ; A61=& %< 6A <; ; A =& + <' ABP& %< A1 ;1FJ& A @ @< @< <B I166<& ' EC . ' C< - 1 ? A@@<@ '@< A 1 . <= 'A @ <B ;1<;'& (1=C G @ (<AB IA1= C<;< EA=' 'G;<=1@< ' @ C< F B F16& DB ' '@< A; 1? AF& A' A6< <@ A @ 1B@1F1 B=' . A & EC ' EA=' I<;g ;<A@g @ =G<<FC A @ 9B66 _ @ AF & ?AI< C1=' A . < ' C< <E' AD1 < ' ' C< CA . D<;' =<=1 &1 &1 ! ' @ %<GB 1<=& G;<=1@<@ I<;' D ' ' <; 66A;@& EC ' CA@ D<< ' <6<F <@ D ' =<I< ' F 66<?<=& D6A . <@ 1 ' C< 91;=' G6AF<& 1 ' 1 =' A@@;<==' ' C< - 1 ?& C< AF =' @ C< 6A < 0 I<; . < & A @ EA=' ' C< G 1 ' @ D;1 ?1 ?' ' A?A1 = '1 ' A' 9 ; . A6 AFFB=A 1 ' C< G =1 1 ' @ C< <E' AD1 < ' EA=' @ BD6 '@1991FB6 N . = ' @ 1 =' . < . D<;=' CA@ C1 C<; '?1I< ' '9<E' G6<@?<=' @ @<I 1 ' ' C< 61D<;A6 FAB=< ' D< AD6< F . G6< <6 ' ';<A==B;< GBD61F G1 1 & A @ @1@ ' 99<;' =B991F1< ' ' C< <P ;< . < A61= 'GA; ' ' =A 1=9 ' C< B; ' ; .' C< F< A; =< @1= ;B= ' ' C< GA; ' @ C< B; & A @ 1 . GA 1< ' @< . A @=' ' C< GA; ' @ A' E 9 6@ GG =1 1 ' C< 0 I<; . < & C E<I<;& D<1 ?' 6 A6& =>169B6& A @ G;B@< & A @ =BGG ; <@ D ' C< ;1?C ' < ;<& . A@< ?;<A ' A @ C B;AD6< <99 ; =' '=B; . B ' C< @1991FI ;6 1<=' @ C< G =1 1 & A @ C< CA . D<;=& A '1 =' =B??<= 1 & A@ G <@ = . < 1 . G ; A '6AE=' F F<1I<@ 1 ' A' 61D<;A6 =G1;1 ' < @ C<=< AD 61=C<@ C< F< = ;=C1G& A @ C<;=' =A F 1 <@ C< @+>?< ; @+<A' = = < . ' @ =G<F1A61 '1 ' C< ?;<A ' @1I1=1 =' @ C< DB@?< & A @ C< G<;0 . A < F< @ C< <6<F ;A6 61= =& A @ F ; 66<@ C< AF 1 ' @ 0 I<; . < ' 991F1A6=' 1 ' ;<=G<F ' ' <6<F 1 =' 1 A66 & C< ;1?C ' @Q1 <;G;< 1 ?' C< '6AE=' EA=' ;<F ? 1=<@ A=' D<6 ?1 ?' ' C< C;<< D;A FC<=' @ C< <?1=6A B;< ' ;<=G<F ' '9 ;<1? ' A99A1;=& C< 0 I<; . < ' ;<=G @<@' ' 61< E1=C<=' @ ;A F< 9 ;' C< =A9< ' @ 0 ;<<F< D ' =< @1 ?' '919 << ' C B=A @ . < ' ' C< ;<A& B @<;' 0< <;A6 A1= ' 9;A D;AC1 . ' 9<66 DAF>' D<9 ;< C< . & 0 ;<<F< EA=' 9;<<@& A @ AG ' @ = ;1A' <= AD61=C<@' A' ;<?B6A;' 0 I<; . < ' C<;<' ' ;<=G<F ' ' @ . <= 1F' A99A1;=&' C< D= AF6<=' 1 ' C< EA ' @ C< 0 I<; . < 'D<FA . < . ;< B . <; B=' @A ' D ' @A & DB ' C< ' <I<; C<6<=' F B;A?< B=6 ' E ;><@' A ' C<1;' GA1 9B6 A=>' C<1;' . = ' @1991FB6 ' AFC1<I< . < ' EA=' C< 1==B1 ?' @ E ' @<F;<<=& EC1FC G; C1D1 <@ C< S<=B1 =' ' A>< GA; '1 ' C< 1 =61BF ' 1 ' @ B C ' (' < @ C<=< @<F;<<=' C< =<F @A; ' <FF6<=1A= 1FA6 FC 6=' E<;< G6AF<@ B @<;' C< F . . ' 6AE& A @ D ' A C<;' 1 ' EA=

! * !' > % + ' ;' > ' ' ' '

;@A1 <@' CA ' ' <' =C B6@' <1 C<;' <AFC' 1 ' ;' @1;<F ' C< . ' EC ' D<6 ?<@' @?7@@A'<B>BJ$+ ' = F1< ' ' AB C ;1M<@' D ' 6AE ' C<=<' @<F;<<=' E<;< C<'S;A . A' . = ' GA1 9B6' F F<==1 ' EC1FC' CA;6<=' : ' . A@<' ' C< @< . A @=' 9' C<' A?<' A @' ' =AF;191F<' F B6@' CAI<' F = ' C1 . ' . ;<' C<' ?;<?A 1 ' 9<6 ' 1 =<69' E B @<@' D ' C< . ' ' C<' C<A; ' A @' C<' - 1 ?' EA=' =B; ; B @<@' D ' F;1<=' 9' A ?<;' A @' 1 @1? A 1 ' C<' ;< . < . D;A F<' 9' C<' 9 ;F<@' F F<==1 =' EC1FC' C<' . A;FC' CA@' . A@<' ' C1=' . 1 1= <;=' =G<<@16 ' FCA ?<@' ' AI<;=1 ' C<' @1= ;B= ' E1 C' EC1FC' C< ' CA@' 1 =G1;<@' C1 . ' A @' 9; .' C< F<9 ; C' C<' EA FC<@' E1 C' =<F;< ' =A 1=9AF 1 ' C<' 1 . G;B@< ' F 0 @BF ' 9' C<' <9 ' EC1FC' A6A; . <@' A ' C<' G;<=< F<' 1 ' C<' CA . D<;' 9' A' B . <; B=' . 1 ;1 ' 1 . DB<@' E1 C' G;1 F1G6<=' 1; ;<F F16AD6<' E1 C' C<' E1=C<=' 9' C<' . 1@@6<' F6A==<=' @' F =F1 B=' 9' C<' 1 @1== 6BD6<' 61 >=' EC1FC' F 0 <F <@' C1=' . 1 ;1 ' E1 C' C<' ;<1? 1 ?' @ A= ' EA=' . ;<' <A?<;' 1 ' 1 =' @< . A @=' 9 ;' = ; ?' ?BA;A <<=' A?A1 = ' C<' ;< B; ' 9' 1 =' A@I<;=A;1<=' ' G E<;' CA ' 9 ;' C<' GA==1 ?' 9' 6AE=' 9 ;' C<' ? @' 9' ;A F<' ' EA=' C1=' 9<<61 ?' EC1FC' G;1 F1GA66 ' < @<@' 1 ' ' A @' !' ' ?1I<' A ' B 9 ; B0 A <' FCA;AF <;' 9' 1 . GA 1< F<' A @' 1; ;1 A 1 ' ' CA ' GA; ' 1 ' C<' 6<F 1I<' CA . D<; ' C<' 1 1= ; ' <A?<;6 ' @<=1;<@' ' 1 F;<A=<' 1 =' = ;< ? C' D ' ' ' ' A== F1A 1 ?' E1 C' 1 =<69' = . <' 9' C<' < . 1 < ' . < ' 9' C<' 6<9 - ?'A @#<YY'Y < ;<' N DB ' A66' 1 =' A < . G =' 1 ' C1=' @1;<F 1 ' E<;<' 9;B= ;A <@' #) $+$A<7K ' D ' C<' - 1 ?3=' 1 I1 F1D6<' @1=61><' 9 ;' <I<; ' G ; 1 ' 9' C<' 1D<;A6' GA; Y' CA;6<=' : ' ;<?A;@<@' C<' G;<; ?A 1I<=' 9' C1=' F; E ' A=' =BG<;1 ;' ' C<' FCA; <;' N C<' EA=' 1 @1? A ' A ' C<' I<; ' 1@<A' CA ' C1=' ;1?C ' ' =<6<F ' C1=' . 1 1= <;=' EA=' =CAF>6<@' A @' 61 . 1 <@' D ' F1;FB . = A F<=' N A @' ' 1<6@' ' C1=' G 1 ' EA=' 1 ' C1=' G1 1 ' <JB1I A6< ' ' AD@1FA 1 ?' < DA@' A6;<A@ ' @ <' I1 6< F<' ' C1=' 9<<61 ?=' D ' A>1 ?' 9; .' C<' <P ;< . <' 1?C ' A' . 1 1= <;' EC =<' G1 1 =' E<;<' ' C<' GB;<' <PG;<==1 ' 9' C1=' E ' =< 1 . < =' A @' C<' EA=' ;<= 6I<@' ' ' A><' A C<;' = <G' EA;@=' C<' <9 ' ' C1=' < <=' 1 ' 9AF ' A' FAD1 < ' D<6 ?1 ?' ' C<' ;1?C ' < ;<' A @' F . G =<@' 9' . < ' EC ' E<;<' <JBA66 ' @<I <@' ' C<' - 1 ?' A @' A AFC<@' ' C<' FCA; <;' EA=' C<' I<;1 AD6<' ;<G;<=< A 1I<' 9' C<' = 1 B 1 A6' GA; ' N C<' EA=' A= 1=C<@' C<;<9 ;<' A ' C<' GG =1 1 ' EC1FC' C1=' 0 I<; . < ' = 166

o' M@') $+$A<@7A' ADJ ; $<<@C' <B' <M@' $+ ' >' +B<@' $+' SM$?M' <M@K' C@A?7$J@C' <M@$7' LBA$1 <$B+' >+C' <M@' +@?@AA$<K' <M@7@' S>A' B3' A@?D7$+ ' <M@' ADLLB7<' B3' <M@' ; >RB7$<K' JK' ?B+?$#$><$+ ' <M@' ; BC@7><@' $J@7>#A' >+C' <M@' BK>#$A<A ' >+C' L7@A@+<$+ ' #>SA' SM$?M' SBD#C' BJ<>$+' <M@$7' GB<@A ' M$A' +B<@' ?B+?#DC@C' S$<M' AB ; @' A>C' >+C' L7BLM@<$?' SB7CA' 7@AL@?<$+ ' <M@' C>+ @7A' SM$?M' <M7@><@+@C' <M@' ?7BS+' B3' >$+<' BD$A ' S@7@' >+K' C$33@7@+<' LB#$?K' >CBL<@C ' M>7#@A' " ' #@3<' $<' D+>+AS@7@C % >7>+<@(A' P' $3@' B3' BK@70 B##>7C 0

< F B <;<@ A @ C EA= 9 @ 9 ;<G<A 1 ? CA ' ' F F<==1 ' EC1FC C<
F; E ' F B6@ . A>< E B6@ =A 1=9 ' C< 61D<;A6= ' < C G<@ CA ' C< . . < '
B6@ F . < EC< ' C< . 1 1= <;= EC C< F =1@<;<@ CA@ D<< ' 9 ;F<@ _
G ' C1 . ' D ' GBD61F G1 1G E B6@ D< F @< . <@ D ' 1 'A @ C< ;B= <@
' D< AD6< ' 91 @ 1 ' C<1;' @1= . 1==A6 D ' C< G GB6A;' 1F< A ;<A= ' ;' A
G;< <P ' 9 ;' ;< B; 1 ? ' C< . < ' 9 C1= FC 1F<
' CA;6<= : ' . A@< A ' C1= G<;1 @ A K B; < ' 1 ' C< A= <; ' @<GA; . < =
EC<;< C< 9A I B;AD6< ;<F<G 1 ' D<= E<@ BG ' C1 . ' D ' C< G GB6AF<
A ' A66 1 . <= <A?<;' ' =<< A >1 ?@<F<1 I<@ C1 . ' E1 C ;<=G<F ' ' C< =6A < 9
GBD61F 9<<D ?@ A @ A FC<F> =B99<;<@ AD B ' C< =A . < G<;1 @ D ' C< 1 1= ; '
. A@< C1 . ' ;<= 6 I< ' FA; ; ' 1 ' <P<FB 1 ' C1= 9A A6 @<=1? = E ' 1 . G ;0
A ' 6AE= < 9 EC1FC ;<6A <@ ' x1< ;?A 1MA 1 ' 9 C< . B 1F1GA6
B F16= EC16= ' C< C<;' ;<?B6A <@ C =< 9 C< @<GA; . < = A @ C<
A; ; @1==< . < = E<;< =BD . 1 <@ ' C< CA . D<;' 9 %<GB 1<=' C<
<P ;< . < 1?C ' ;<9B=<@ ' =BGG ; ' C< . 9 ;?< 9B6 9 C<@ F '
;1 <= < <; A1 <@ D ' 1 ' 1 ' 7 E1 C ;<=G<F ' ' 6 FA6 9;A ' B;A1C<11 . 1= ; #
FC1=<=N A @ A G ; 1 ' 9 C< . @<;A < 1D<;A6= ' C< C<;' C1 . @ . A@<
F . . ' FAB=< ' C1= FFA=1 ' E1 C C< ;< I 6B 1 A; ' 1D<;A6= EC ' E<;<
' 6<=' @A ?<; B= CA ' C< 6 ;A A61= = ' 1;< F = 1 B 1 A6 . A;FC '
' AF 1 ? CB= C< ' F . . 1 <@ A ?;<A ' 9AB6 A @ @1@ ' =B991F1< 6 ' 11><
1 ' AFF B ' C< @1991FB6 ' G =1 1 ' 9 A @ C< G;A1=<E ; C ' <99 ; = . A@<
D A 1 1= ; ' 1 ' < I <; ' ;<=G<F ' E ; C ' 9 <= << . A @ <I< ' . ;< 61D<;A6
CA ' 1 ' CA@ I< B;<@ ' AGG<A;' C< 6A <; D B @ ' F 9 ; . ' ' C<
9 ; . A6 ;@<;= 9 C< - 1 ?@ CA@ A B F<@ CA ' ' . @191FA 1 ' 9 C<
G; G =<@ 6AE= E B6@ D< G<; . 1 <@N A @ A = . A66 . AK ;1 ' CA I 1 ? @<F6A;<@
1 ' 9A I B;' 9 A ' A . < @ . < C< ' E<;< 1 . <@1A <6 ' E1 C '
@;AE ' C< B; ' ;<K 1F<@ 1 ' C< @<9<A ' CB= =B99<;<@ D ' 1? AF 1 1= ;
C< AD1 < CA1 6<= : ;<= 6 I<@ ' @1= . 1== C1= B F16 A @ ' C< C
B?B= ! A9 <;' C< I < 9 ;' C< DB@?< ' 9 8" A @ C< F6 =< 9 C<
<==1 AGG<A;<@ C< @<F;<< EC1FC F;<A <@ A <E' FAD1 <
C;<< <E ; C ' . < C< + ;1 F< @< + 61? AF A @ ' @< 6A (.' '
@ A < A @ %< (B; . E<;< . A@< . < . D<;= 9 C< <E B7 ; ><$B+ B3
FAD1 < A= A =G<F1<= 9 @<91A F< 'GBD61F G1 1 ' C< 91;= C<
EC ' EA= < @ E<@ E1 C = . < . = '<= 1 . AD6< JBA61 1<= EA=
C< 61 I1 ? <PG;<==1 ' 9 C< ?;<?A 1 1= ' GA; N C< =<F @ ;<G;<0
=< <@ A66 CA ' EA= . = ' I1 6< ' 1 ' C< B G GB6A;' FCA . D<;' 9 7 N A @
C< C1;@ A ' 6@ 6<A@<;' 9 61< C BA = EA= 6 ' > E ' ' C< G< G6<

C< I1<E=‘ 9‘ C< A 1 ‘ @1@‘ ‘ <P1= ‘ A @‘ < ;<A <@‘ C1 . ‘ ‘ ;< <= AD61=C‘ 1 ‘ ‘ A . < @ . < ‘ < @1 ?‘ ‘ = 9 < ‘ C1=‘ GC;A=<‘ EC1FC‘ EA=‘ F =1@<;<@‘ A=‘ 1;;1 A 1 ?‘ EA=‘ G; G =<@‘ A @‘ ‘ 0B1M ‘ ; =< ‘ F . DA ‘ 1 ‘ [‘ (‘ C< 9;A > <==‘ 9‘ B;‘ E ;@=‘ E< FA ‘A6 <‘1 9 ; . ‘ C< 0 I<; . < ‘ 9‘ C< ;B C‘ ?A1 ‘ 1 =‘ A < 0 1 ‘ A @‘ @1==1GA <‘ 1 =‘ 166B=1 =‘ < ‘ B=‘ D<EA;<‘ C< ‘ 9‘ @1 . 1 1=C1 ?‘ C<1;‘ 9 ;F<N‘ C< ;B C‘ CA=‘ A6;<A@ ‘ =B991F1< ‘ @1911FB6 ‘ 1 ‘ ?A1 1 ?‘ A@0 . 1 A F<‘ 1 ‘ C< F B F16‘ FCA . D<;‘ 9‘ >1 ?=N‘ 6< ‘ B=‘ ‘ =< @‘ 1 ‘ 611 C<;‘ GA6<‘ A @‘ < 9<<D6<@ ‘ C< A . < @ . < ‘ EA=‘ ;<K<F <@‘ A @‘ E ‘ CB @;<@‘ A @‘ E< <‘ . < . D<;=‘ A?A1 =‘ A‘ CB @;<@‘ A @‘ <1?C <‘ I <@‘ 9 ;‘ C< . < . ;AD6<‘ A@@;<==‘ CA;6<=‘ : ‘ A9 <;‘ CAI1 ?‘ C<A;@‘ 1 ‘ @1=G6A <@‘ . BFC‘ 1;;1 A 1 ‘ A @‘ @<F6A;<@‘ CA ‘ C1=‘ ;<= 6B 1 =‘ E<;<‘ > E ‘ A @‘ E B6@‘ ;<0 . A1 ‘1 . . B AD6<#‘ C< CA . D<;‘ EA=‘ G; ; ?B<@‘ A @‘ C< ‘ @1== 6I<@‘ C< - 1 ?‘ 1==B<@‘ A‘ @<F;<< EC1FC‘ A?A1 ‘ F I ><@‘ ¸ C< <6<F ;A6 B##@ @A] <#$@‘ <SB‘ MD+C7@C‘ >+C‘ <S@+<K0B+@‘ A$ +@7A‘ B3‘ <M@‘ <M@‘ M> ; J@7A A@@;<==‘ E<;<‘ A6 . =‘ A66‘ ;< <6<F <@‘ A @‘ C< GG =1 1 ‘ EA=‘ <1 9 ;F<@‘ D ‘ . A ‘ <E‘ . < . D<;=

‘ C< . <A 1 . <‘ C< AD1 <‘ CA@‘ < @<AI B;<@‘ ‘ D A1 ‘= . <‘ G G 16A;1 ‘ D ‘ . <A =‘ 9‘ A‘ ?;<A ‘ . 161 A; ‘ =BFF<==‘ A @‘ A ‘ A99; ‘ 99<;<@‘ ‘ C< ;< FC‘ F =B6‘ ?AI<‘ C< . 1 1= ; ‘ A‘ 9 ; B A <‘ GG ; B 1 ‘ 9‘ GB;?1 ?‘ 61<‘ =<A‘ 9‘ C< A;DA; ‘ G1;A <=‘ ‘ <PG<@1 1 ‘ A?A1 =‘ 6?1<;=‘ EAK‘ @< <; . 1 <@‘ ‘ C< F . . A @‘ 9‘ C< A; . ‘D<1 ?‘ ?1I< ‘ ‘ ‘@<‘ (B; . ‘ A @‘ CA‘ 9‘ C< AIA6‘ 9 ;F<=‘ ‘ @ . 1;A6‘ %BG<;;*‘ C< F1 ‘ EA=‘ A>< ‘ A @‘ C< AD1 <‘ A @‘ B; ‘ ;<F<1I<@‘ E1 C‘ @<61?C‘ C< <E=‘ 9‘ C1=‘ FAG B;<‘ 9 D;1661A ‘ F JB<= N‘ DB ‘ +A;1=‘ =61A;<@‘ DB ‘ I<; ‘ =61?C 6 ‘1 ‘ C<1;‘ K ‘ 9 ;‘ 1 ‘ B @<;= @‘ CA ‘ C1=‘ I1F ; ‘ E B6@‘ ;< @<;‘ C< . ‘ = 166‘ . ;<‘ ;A=C‘ A @‘ 9<A;<@‘ CA ‘1 ‘ E B6@‘ A><‘ . ;<‘ 9; .‘ C< 61D<; 1<=‘ 9‘ C< A 1 ‘ CA ‘1 ‘ E B6@‘ A@@‘ ‘1 =‘ ?6 ;

C< G 61 1FA6‘ = ;B??6<‘ A ‘6< ? C‘ AGG; AFC<@‘ 1 =‘ <; . 1 A 1 N C<‘ ?< <;A6‘ ;<=B6 ‘ 9‘ C< <6<F 1 =‘ EA=‘ > E ‘ A @‘ C< 1 1= ; ‘ 9 B @‘ 1 =<69‘ 1 ‘ 9; ‘ 9‘ A‘ . AK ;1 ‘ = 166‘ . ;<‘ F . GAF ‘ 1 . GA 1< ‘ A @‘ C = 16<‘ =‘ 9‘ 61<‘ . < . D<;=‘ 9‘ C< . AK ;16 ‘ C E<I<;‘ @1@‘ ‘ E1=C‘ 9 ;‘ 61<‘ I<; C; E‘ 9‘ C< C; <‘ A @‘ E<;<‘ =1 F<;<6 ‘ A AFC<@‘ ‘ C< F = 1 B 1 N DB ‘ A ‘ C1=‘ G<;1 @‘ A=‘ 1 ‘ 2! ‘ C< B; ‘ ‘ 1 =‘ . 1=9 ; B <‘ F B6@‘ ‘ @1= 1 ?B1=C‘ D< E<< ‘ C< = 1 B 1 A61= =‘ A @‘ C< <I 6B 1 1= =‘ A @‘ EA=‘ D= 1 A <6 ‘ ;<= 6I<@‘ ‘ 6 >‘ BG ‘ C< FCA; <;‘ EC1FC‘ EA=‘ 61<‘ DBF>6<;‘ 9‘ C< @ A= ‘ #‘ C< =F B;?<‘ 9‘ ;A F<‘ ‘ D<‘ @<I <@‘ ‘ C< = 1 B 1 ‘ EA=‘ 1 ‘ C<

"" / ! ' ! /' 0 ! 0 ' : !>' ' 8 -'

< <=' 9' C<' B; ' D<' C<' < < . ' 9' C<' B; A @' CB=' D ' ;<9B=1 ?' 1 =' =BGG ; ' ' C<' . < 'EC 'E1=C<@'9 ;' C<'FCA; <;' " #' C<' (B;D ='1 '1 0 F61 <@' C< . ' 'K 1 ' C ='<' EC 'E1=C<@'9 ;' C<'FCA; <;'E1 C B ' C<' (B;D = C<' @ A = ' E' CB ?' ' C<' <@?<' 9' C<' AD ==' A @' CA@' 3<AFC<@' CA '

#>7 ; $+ 'B ; @+A

9A A6' G 1 'A 'EC1FC' C<' 9A66' 9'A'? I<; . < '1='9 ;<=CA@ E<@' D ' C<' . ='1 9A661D6<'= . G . =' 6 . ='A66' C<' . < '< . 1 < ' 9 ;'> E6<@?<'A @' A6< 'CA@'GA==<@' I<;' ' C<';A >=' 9' C<' GG =1 1 ' A @' C ='<' <I< 'EC 'CA@' ;1?1 A66 'D<< ' C<' . ='< <;?< 1F'1 ' C<'=BGG ; ' 9' C1=' @ A= ' A @' EC 'CA@' C<' ?;<A <= 'G<;= A6' 1 <;<= ' 1 ' ><<G1 ?' 1 ' ' C<' F = 1 B 1 A6' GA C' C< 'CA@' ;AF<@' B ' 9 ;' 1 ' CA@' 9 ;' C<' . ' GA; ' D<F . <' C<' FC1<9=' 9' C<' GG =1 1 ' 1 A66 ' 1 =G1;1 ?' C<' F1 1M< =' A=' 1 ' @1@' E1 C' A ' 1 I1 F1D6<' 9<<61 ?' 9' @1= ;B= ' D ' . <A =' 9' C<' I<; ' '=BFF<==' EC1FC' 1 ' C<;' 1 . <=' E B6@' CAI<' F 91; . <@' 1 =' AB C ;1 ' 1 ' =AE' C<' F B ; ' ';<K<F ' C<' ?6 ; ' EC1FC' 1 ' 99<;<@' 1 ' A @' 9 B @' CA ' . A '1 . GB <@' '1 ' A=' F;1 . <=' ' 6 ' C<' 9AB6 =' EC1FC' 1 ' CA@' ;<A66 'F . 11 <@' DB ' <I< ' C<' FA6A . 1 1<=' EC1FC' 1 '< @<AI B;<@' 'G;<I< ' A '@<GA; . < =' 1 '9AF ' E<;<' A ' C1='G<;1 @' @<= 6A <@'D ' B . <; B='91;<=' A @'GBD61F';B . B;=' E< '= '9A;'A=' <I< ' 'AFFB=<' C<' 0 I<; . < ' 9'D<1 ?' C<'AB C ;' 9' C< .

C<' G<;1 @' 9 ;' C<' A==< . D61 ?' 9' C<' CA . D< . ' @;<E' <A;' A @' CA '

#$+C+@AA' 9' D<' . A@ <==' EC1FC' 1=' C<' =B;<' 9 ;<;B <;' 9' C<' ;B1 B; ' # G9'< . G1;<=' 9166<@' C<'GA6AF<' 9' C<' - 1 ?' 9' ;A F<' ;A ?<' ;<G ; =' F1;FB6A <@' A ' A1 6 B@' C<' ;<=1@< F<' 9' C<' B; ' EC<;<' C<' . A 19<= A 1 =' 9' GBD61F' 9<<61 ?' E<;<' A ;1DB <@' 6 ' ' C<' G<; 1F1 B=' 1 96B< F<' 9'A' . . 1 <<' EC1FC' ;<A66 ' <P1= <@' DB ' ' EC1FC' C<' A61= =' A ;1DB <@' A ' <PA??<;A <@' G E<;' ' EA=' CA ' A6 <' C< ' =A1@' EC1FC' A61< A <@' ;A F<' 9; .' 1 =' - 1 ?' A@' C<' GBD61F' 9B @=' 1C66< ' 1 ' IA6B<' =1 F<' C<' AGG 1 . < ' 9' C<' <E' 1 1= ; 'd' EA=' C<' E ;>' 9' C<' . . 1 <<' %1@' C<' 1 CAD1 A =' 9' C<' B C' ?1I<' A' D ;1661A ' ;<F<G 1 ' ' O< <;A6' A9A < <' ' C1=' ;< B; '9; .' C<' 1 <@' A <=' 2 ' ' EA=' C<' . . 1 <<' EC1FC' CA@' ;@<;<@' C<1;' AFF6A . A 1 =' %1@' C<' G< G6<' ' C<' F ;A1 ' ;< . A1 ' F 6@' A @' A6 . ='1 @199<;< 'A ' C<' <E=' 9' C<' F 0 JB<=' 9' 6?1<;=' d' [' 'EA=' =A1@' C<' A61= =' [' D<FAB=<' C<' . . 1 << CA@' F . . A @<@' C< .' 'D<'=16< ' C<'@1=F I<; ' 9' C<' . < . D<;=' 9' C1=' . . 1 <<' A @' C<' GB 1=C . < ' 9' = . <' 9' C< . ' EA=' A66' CA ' EA=' EA 1 ?' AFF ;@1 ?' ' C<' A61= =' 9 ;' C<' ;<= ;A 1 ' 9' ;@<;' A @' 61<' =BGG ;<==1 ' 9' C<' <I 6B 1 1= =' C<' A . <' 9' AG 6< 'EA=' 1 ' <I<; ' . B C' A @' C =<' EC ' CA@' 9 ; . <;6 ' I<;EC<6 . <@' 1 ' B@ C' 1 =B6 =' #1

C< @A ?<;' 9 CA I1 ?& ;<F B;=< ' I1 6< 'A @ 166<?A6 . <A=B;<=N DB 'A= C< -1 ?& D '1 <;G;< 1 ?' <I<; ';<9B=A6 A=A =1? ' 9 E<A> <==A @A ' ADA 0 @ . < ' 9 C1 . =<69 A ' C< . . < ' 9 @A ?<;& CA@ CB= ;A =9 ; . <@ C< JB<= 1 11 9 A <1 ' < 9C B;& A D61 @ 9<<61 ?' 9 @<I 1 'EA= A6 < A < @<@ ' ' C< C 9 SB6 ' C< 'GBD61=C<@A ' <PG6A A 1 ' 4 @;A;I 'BG D ' '@< CA <6ABM<& A @ 9 66 E<@D ' C<9A . B= CA; <;Y SB6 ' ' y1dD;<<= =1? <@ ' C< G;<I1 B= <I< 1 ?& EC1FC =BGG;<==<@ C< 61D<; ' 9 C< G;<==& A B66<@ C< 6A < <6<F 1 =& A @ A;D1 ;A;16 ' F;<A <@ A <E <6<F ;A6 = = < . ' 66 C< . < . D<;='G;<=< '1 ' +A;1= E<;< E1661 ?' ' =CA;< C< ;<=G =1D161 ' 9 C<=< @<F;<<=& A @ C< ' E<;< F B <;=1? <@ D ' C< +;1 F< @< + 61? AF& CA <6ABM<& C< B ' @< +< ; < & @< D<6& @< 0B<; A I166<& (A; ' AG<66<& A @ (A; ' @3 AB==<M ' C< . < . D<;' 9 C< B F16 . = ' FAGAD6< 9 . A>1 ?' C< . 161 A; ' A; ;A ?< . < = <F<==A; ' ' C< FA;; 1 ?' B ' 9 C<=< @<F;<<=& (B; . & C< 1 1= <;' 9 A;& EA= = 166 1 ' 9;1FAN C< +;1 F< @< + 61? AF >' C1= G6AF<& A @ EA= = 'F<; A1 ' 9 =BFF<== CA 'C< >' '<P ;A ;@1 A; ' . <A = ' =<FB;< 1

'G; 6 ?<@ A @ =B66< ' . B; . B;' =G;<A@ C; B?C +A;1= A ' C< GBD61FA0 1 ' 9 C<=< @<F;<<=& A @ ' C< 9 66 E1 ?' @A ' C<;< AGG<A;<@ 1 ' C<Y 7B<@A< B3 <M@ GG =1 1 ' K B; A6= A '< <;?< 1F G; <= & =1? <@ D ' 9 ; ' RBD ; >$$A<A ' C;<< 9 C<1;' G;1 @GA6 F ;1DB ;= ;' <@1 ;=& A . ?= ' EC .' E<;< ' CA;6<= @< < . B=A & C1<;=& 1? < & ; . A @ A;;<6& (A @<& A @ CT <6A1 ' C< ' @<F6A;<@ CA ' C< 'F B6@ ' =BD . 1 ' ' 166<?A6 @<F;<<=& A @ B;?<@ C< @<GB 1<= ' ;<=1= ' C< .'N ';<?A;@ C< . 0 =<6I<= A= 6<?A66 '<6<F <@& A @ 'G; <= ' E1 C C< . =<6I<= ' ;@<;= E<;< ?1I<;' 9 ;' C< @<= ;BF 1 ' 9 C<1;' G;<==<=& A @ A = ;B??6< >' G6AF< 1 ' C< G;1 1 ?' 991F<=& EC1FC EA= =G<<@16 ' ;A =9<;;<@ ' C< = ;<< =& 1 ' m+ 'B3 >7s@ EC1FC C< . B6 1 B@< ' C< =A . < <I< 1 ?' D; >< @ E ' C< 1 =1? 1A 9 . A;FC & E1 C C< F; ' 9 [' C< CA; <;' 9 ;' <I<;' z`' A @ 1 . G; I1=<@ B . <; B= DA;;1FA@<= ' +A;1= EA= @<F6A;<@ 1 ' A' C@GB#D<$B+' B3 , 2 ' M@' <M7@@' C>KA' B3 'D#K = A < 9 =1<?<& A @ A;=CA6 A; . & %B>< 9 A?B=A& EA= G6AF<@ 1 ' F . . A @ 9 C< - 1 ?3= C B=<C 6@ ; G=& 9 C< ?BA;@=& A @ 9 C< ; G= 9 C< 61 <& C< A6 B . D<;' 9 EC1FC 1 ' +A;1= @1@ ' <PF<<@ E<6I< C B=A @' < 6<@ C< . 'A?A1 = ' C< 1 =B;?< ' G GB6AF<& FFBG1<@ A66 C< = ;A <?1FA6 G 1 =& A @ =B . . <@ A@@1 1 A6 ;<?1 . < = 9; .' C< <1?CD B;1 ?' ?A;;1= = ' (B ' A6;<A@ ' C< V <6 @< 166<h ADA @ <@ D ' C< E ' G;<9<F =& CA@ 9A66< '1 ' C< CA @=

9' C< 1 =B;;<F 1 1= =' N <E' . < (E1 C B ' A ' ;<?B ' 'AB C ;1 (F . 0 . A @<@' C<;< 1 ' C< A . < 9' C< G< G6< ' C< ;1F 6 B;' EA=' ;A1=<@' C<;<(A @' C< E ;@' [' <GBD61F ~ EA=' <FC <@' A?A1 ' A @' A?A1 ' D ' C]' <PF1 <@' F; E@' ' G ; 1 ' 9' C< GG =1 1 ' @<G 1 1<=' EC ' E<;< " 1 ' +A;1=(CA I 1 ?' A==< . D6<@' A ' C< C B=< 9' < 9' C< . ' ' C< . ; . ?' 9' C< C(;<F ?0 1=<@' C< <F<==1 ' 9' @< <; . 1 1 ?' ' = . < F . . ' G6A (A @' 9' =<1M1 ?' C< ;<1 =' 9' AB C ;1 ' 9 ;' C< GB;G =< 9' =A I 1 ?' ;A F< 9; . ' @<=G 1= . ' A @' A A;FC ' 9' C1=' B . D<;' E<;< ' A=1 . 1;' +W;1<;(A91 <(A9A < <(C< <6@<;' %BG1 (CA;6<=' %BG1 (OB1M (166< . A1 (<DA= 1A 1((< KA . 1 ' = A (A6 I <; <(B@;< ' @< +B1;A I <AB(AB?1 (F'5 C< ' <@(E1 C' = . < . @191FA 1 =(A' @<F6A;A 1 ' @;AE ' BG' D ' ' OB1M (1 ' E3C1FC' C< ' 9 ;F1D6 ' G; <= <@' A?A1 =' C< @<GB E=`Y#A'Y @<F;<<=' 9' C< * C(A @' @<F6A;<@' C< . =<6 I <=' 6<?A66 ' <6<F <@(#=' A @' 1 FAGAD6< 9' D<1 ?' ;<G6AF<@' =A I <' D ' I 1; B< 9' <6<F 1 =' F @BF <@' AFF ;@1 ?' ' C< 9 ; . =' ;@A1 <@' D ' C< 6AE ' 1P C;<< =1? A B;<=' E<;< AGG< @<@' ' C1=' G; <= (D<1 ?' C =< 9' C< @<GB 1<=' AF BA66 ' G;<=< (A @' 9' C =< 9' C<1;' AD=< ' F 66<A?B<=' EC . ' C< 91;= ' =BGG =<@' E1661 ?' ' K 1 ' _E1 C' C< .

' C< C' A6 . = ' C< EC 6< 9' +A;1=' 9<66' 1 ' C< CA @=' 9' C< 1 0 =B;?< =' B . <; B=' B 19 ; . =' 9' C< ;<F< 6 ' @1== 6 I <@' A 1 A6' ?BA;@' CA@' AGG<A;<@(A@ ; <@' E1 C' C< ;1F 6 B;<@' F F>A@<(1 ' C< . 1@= ' 9' C< G GB6AF<(A @' C< GBG16=' 9' C< + 6 <FC 1F' A @' C< C<;' ?;<A ' =FC 6=(9 ;F1 ?' C< ?A <=' 9' C<1;' <= AD61=C . < =(CA@' <I <; EC<;< D<F . < 6<A@<;=' 9' C< 1 =B;;<F 1 ' ' . 161 A; ' G;<FAB 1 ' CA@' D<< ' A>< ' D ' C< 0 I <; . < ' D<9 ;< C< F 961F N C< = 6@1<;=' E<;< 6<9 ' E1 C B ' 9 @(A @' . B; . B;<@' N A @' = . < F . GA 1<=' 9' C< 61 < 6A1@' @ I ' C<1;' A; . =' AG@' 9;A <; 1M<@' E1 C' C< G< G6<' C< ; A6' ?BA;@' A @' C< ;<=' 9' C< ; G=(A==A16<@' 1 ' <I <; ' @1;<F 1 (A @' I <;EC<6 . <@' E1 C' G; K<F 16<=' CB;6<@' 49; .' C< C B=< G=(A @' E1 C' . B=><' DA66=' 91;<@' 9; ." D<C1 @' EA66=' D ' 1 I 1=1D6<' < < . 1<=(9 B?C ' I A61A 6 (A @' 9<66' DAF>' BG ' C< JBA; <;' 9' C< B I ;< A @' C<" B16<;1<=(' EC1FC(' C< <I < 1 ?' 9' C< C(C< @<9< F< ' C< GA;' 9' C< AB C ;1 1<=' EA=' A6;<A@ ' 61 . 1 <@ ' C< . ; 1 ?' 9' C< ! C' C< @<GB 1<=' EC ' CA@' @;AE ' BG' C< G; 0 <=' =1? <@' ' C< G;<I 1 B=' <I < 1 ?(1 ' F . G61A F< E1 C' 61< E1=C<=' 9' C< FC1<9' F1 1M< =(. A@< A9A < < F . . A @<; 1 FC1<9' 9' C< A 1 A6' ?BA;@(A @' . 1 A <@' A' . B 1F1GA6' F . . 1 << FCA;?<@' E1 C' C< B KG1GA(@B ' 9' G; I 1@1 ?' 9 ;' C< =A9< ' 9' 619<' A @' G; G<; (A @' 9' < . . 1=1

7" ' ' '0, 2 ' : !> ' 8* -'

G; I1@1 ?' 9 ;' C<' ? I<; . < ' 9' C<' F1 ' ' C1=' F . . 1 <<&' E1 C' A9A < <' A @' C1=' = A99&' 1 . . <@1A <6 ' >'G ==<==1 ' 9' C<' V <6' @<' 166<&' EC<;<' 1 '1 = A66<@' 1 =<69' 1 ' C<' . 1@=' 9' A' F; E@' <PF1 <@' D ' I1F ; &' DB ' EC1FC' > <E' C E' ' ;<=G<F ' 1 =<69' D ' G; C1D1 1 ?' 'GA1 ' 9' @<A C' @<IA= A0 1 ' A @' G166A?<

(<=1@<' C<' =G<F AF6<' 9' A' FAG1 A6' ;<D<661 ?' 1 ' C<' A . <' 9' C<' FCA; <; A @' 9' C<' I1 6A <@' 6AE=&' CA ' EC1FC' EA=' G;<=< <@' A ' A1 6 B@' 1 ' C<' 1 <;1 ;' 9' C<' ; A6' ;<=1@< F<' EA=' ' 6<==' . <;<= 1 ?' . <' F B; 1<;=' 9'C1?C' ;A >&EC =<' 1 <661?< F<' EA=' JB1F>< <@' D ' C<' 1 . . 1 < F<' 9' C<' @A ?<;' A @' C<' <PG<;1< F<' 9' . 1=9 ;0 B <&' CA@' D<< ' <; ;191<@' EC< ' C< ' =AE' C<' @<F;<<=' 9' SB6 &' A @' F 91 <@' C<1;' =<F;<' AGG;<C< =1 =' D< <A C' A ' B <A= ' =16< F<&' EC16= ' C<' . < ' EC ' A ' <I<; ' . . < ' CA@' AFF<==' ' C<' <A;' 9' C<' G;1 F<&' A @' C =<' 9'A ' 1 9<;1 ;' ;A >' EC ' G< G6<@' C1=' F B; &' CA@' 9 ;' C<' . = 'GA; ' ADA @ <@' C< . =<6I<=' ' A' . A@' @<61?C ' CA;6<=' : &' 1 ' C<1;' G1 1 &' D<?A 'A '6< ? C' ' AF ' A=' A' . A;FC&' A @' A ' C1=' 1 . <' 6 ' EA=' A' >1 ?' C1=' ;A=C' F; E@' _GA==<@' =E19 6 ' ' A' = A < 9' @<=GA1;' A=' D61 @' A=' CA@' D<< ' 1 =' <PB6 A 1 ' (B ' C<' EC ' A6 . = 'A6 <' 9'A66' 1 ' C<' GA6AF<' A ;AF <@' A ' ;<A6' 1 <;<= ' EA=' C<' - 1 ?&' C<' AB C ;' A @' 91;=' I1F 1 . ' 9' C<' G; @1?1 B=' FA A= ; GC<' EC1FC' EA=' E' < AF 1 ?' <' C1@' 9; .' <I<; ' < <&' B @<;' A' FA6 . &' B . I<@' F B < A F<&' C<' =<F;<' 9'C1=' @1= ;AF 1 ?' < . 1 =' 166<@' E1 C' C<' 1@<A=' E1 C' EC1FC' C<' C<A; '1=' A99<F <@' EC< '1 '1=' AD B ' 'G<;9 ; . ' A' = 6< . ' A @' GA1 9B6' @B &' 1 =G1;<@' E1 C' A' F 91@< F<' 1 ' C<' F<6<= 1A6' G; <F 1 &' A @' @<A9' AGGA;< 6 ' ' C<' . B; 9B6' = B @' 9' C<' F=1 ' EC1FC' = B @<@' A9A;' C<' 6A= 'C B;' 9' C<' . A;FC &' CA;6<=' : ' = B?C ' A ' C<' 9 ' 9' C<' A6 A;' 9 ;' C<' F 91@< F<' EC1FC' C<' F B6@' ' 6 ?<;' @<;1I<' 9; .' C =<' A; B @' C1 . ' <' E B6@' @ BD 6<==' CAI<' ;<G; AFC<@' C1 . =<69' E1 C' @<= ; 1 ?' C<' =61?C ' ;< . A1 =' 9' F 91@< F<' EC1FC' = 166' 61 ?<;<@' 1 ' C<' D;<A= =' 9' C1=' 9 66 E<;=' CA@' C<' C1 . =<69' =C E ' A ' =1? =' 9' @<=GA1; ' C<;<' &' EA=' A' = ;A ?<' ;A=C <==' 1 ' C1=' F @BF ' @B;1 ?' C<' 6A <;' GA; ' 9' C1=' ;<1? &' DB ' C<;<' EA=' A6= ' . AK<= ' 1 ' C<' =<;< < ?6A F<=' 9' C<' 6@' . A;FC' A=' C<' = @&' = 166' 91; .' A @' ;<=1? <@&' ' C<' F;B . D61 ?' ;B1 =' 9' C1=' C; <

' C<' . ; 1 ?' 9' C<' ! C' C<' = ;B??6<' = 166' F 1 B<@' 1 ' C<' FAG1 A6' E1 C' A66' CA ' 1 F;<A=1 ?' AB@AF1 ' E1 C' EC1FC' C<' . B6 1 B@<' CA@' D<< ' 1 =G1;<@' D ' C<' =BFF<==' 9' C<' G;<I1 B=' <I< 1 ?' C<' F B ; 'A; B @

, /0, 2 T ' >' $+

+A;1=' CA@' ;1=< ' A @' FB ' 969 F B B 1FA 1 ' E1 C' C<' F1 ' C<' ; A6' A; . ' EA=' @<I 1@' 9' C<' <F<==A; ' =BGG61<=' A @' A=' 1 ' ;<F<1I<@' <1 C<9' G; I1=1 =' ;' ;<1 9 ;F< . < =' EA=' . BFC' @1=F B;A?<@Ñ A @' ;<@BF<@' 1 ' B . D<;=' D ' E B @=' @<A C' A @' @<=<; 1 ' 1 ' EA=' B AD6<' ' . A1 A1 ' 1 =' G =1 1 ' 1 ' +A;1=' C<' BI;<' EC1FC' EA=' 166' @<9< @<@' EA=' A ? 9 C<' A><' D ' C<' G< G6<' A @' A; . ' ;@<;<@' A' ;< ;<A ' BG ' B 6 B@' C<' -1 ?' C E<I<;' ;< . A1 <@' 1 96<P1D6<' 1 ' C<' . 1@=' 9' C =<' EC ' < ;<A <@' C1 . ' ' ;<I ><' C1=' 9A A6' @<F;<<=' < ' 9' ?;<A ' E<1?C , ' @<' < . I166<' ?;A @' ;<9<;< @A; ' 9' C<' CA . D<;' 9' +<<;=' A @' ' @3 ;? B , CA= < <@' ' C1 . ' 1 ' C<' C G<' 9' I<;F . 1 ?' C1=' ;<=1= A F<' C<1;' <99 ; =' E<;<' =<F @<@' D ' C =<' 9' ' @<' 1 ; <=' A ' 6@' =<; IA ' A @' 9;1< @' 9' CA;6<=' : ' EC ' 1 ' 'CA@' A><' A' I<; ' AF 1I<' GA; ' 1 ' C<' <? 1A 1 =' 9 ;' C<' ;<FA66' 9' CA ' G;1 F<' A @' C1=' 9A . 16 ' C< ' B 1 <@' 1 ' < ;<A 1 ?' C<' . A;FC' ' G; B F<' C<' 6 ' E ;@' EC1FC' C< ' =A1@' F B6@' =AI<' C<' F; #I ' EC16=' C<' F 961F ' 1 ' C<' FAG1 A6' = 166' 6A= <@' C<' -1 ?' ;<9B=<@' ' D<61<I<' 1 ' C<' <P < ' 9' C<' G<;16' DB ' A ' 6< ? C' EC< ' A; . ' CA@' <IAFBA <@' +A;1=' A @' CA@' ;<AGG<A;<@' A ' A1 6 B@' E1 C' C<' ;< . A1 =' 9' C1=' DA A61 =' CA;6<=' : ' 1<6@<@' ;< ' >@B7@@A' B3' I ><@' C1=' @<F;<<=' A @' ;@<;<@' 61<' %B><' @<' B . A; ' ' 7@GBQ@C 9 ; . ' A' 1 1= ; ' (B ' 1 ' EA=' ' 6A <Ñ ' . BFC' D6 @' CA@' D<< ' =G16 ' A @' C<' B 1F1GA6' . . 1 <<' 9' +A;1=' ;<K<F <@' C<' B; 3=' I<; B;<=' C<' @A ?<;' 9' C<' 6A <;' ?;<E' ?;<A <;' <I<; ' C . ;Ñ EC 6<' ;<?1 . < =' AGG<A;<@' 1 ' C<' ;A >=' 9' C<' 1 = . '?< =' A @' +AA1=' EA=' G;<GA;1 ?' ' . A;FC' BG ' A1 6 B@' %B;1 ?' C<' 1?C ' 9' C<' ! C @<7@A<' B3'<JB SB6 ' CA;6<=' : ' ;< ;<A <@' ' <;=A166<=' C< ' A ' @A ' D;<A>' C<' ;AI<;=<@' 9 ;' C<' 6A=' 1 . <' C<' GA6AF<' EC1FC' CA@' = ' 6 ?' E1 <==<@' C<' ; A6' G . G' A @' =G6< @ B;Ñ EC< ' =B;; B @<@' D ' D1=' 9A . 16 ' C<' ?AM<@' A ' C<' 1 9A ' EC =<' ?6 ;1 B=' @<= 1 1<=' CA@' D<< ' DA16<@' D ' = ' . A ' C B=A @=' 9' I 1F<=Ñ EC< ' C<' =AE' C1 . ' G;<GA;<@' ' ? ' E1 C' C1 . ' ' C<' 6A @' 9' <P16<' <A;=' ;A ' @ E ' C<' FC<<>=' 9' C<' 6@' @1=F; E <@' . A ' A @' A' GA1 9B6' A ?B1=C' = 196<@' C1=' E ;@=' ' 9<E' C B;=' 6A <;' CA;6<=' : ' EA=' A ' ;1A ' A @' C<' +A;1=1A ' I1F ;=' A ' A1 ' 6 B@'

C<;<' EA=' C E<I<;' . BFC' ;<A= ' ' 9<A;' CA ' C<' 1 . 1 ' . A1 A1 <@' A . ?=' C<' F1 1M< =' 9' C<' 1 . . < =<' FAG1 A6' @B;1 ?' C<' F 961F ' E B6@' D<' D; >< ' A ' C<' . . < ' 9' =<6<F 1 ?' A' <E' 0 I<; . < ' . <' E1=C<@'

' ' < ' ' 2 ' : !> ' '

<= AD61=C' A' ;<GBD61F' N A @' C<;=&' EC ' E<;<' C<' 1 . . < =<' . AK ;1 '& 9' C<' D1 1M< =&' @<=1;<@' ' ;< A1 ' A' . A;FC1FA6' A @' F = 1 B 1 A6' ? I<; . < ' (B ' ' <99<F ' C1=' 1 ' EA=' <F<==A; ' ' 91 @' A' ' . A ' A6;<A@ ' <6<IA <@' AD I<' A66' D ' C1=' G;1IA <' G =1 1 &' A @' EC ' CA@' ?1I< ' 1 F <= AD6<' G6<@?<=' 9' M@ DQ@' @<I 1 ' ' C<' GBD61F' 61D<; 1<=' BFC' A' . A ' <P1= <@& C8 7 8@A A@+7>0' # @' ;A F<' G ==<==<@' C1 . ' 1 ' C<' G<;= ' 9' C<' %B>< ! @& A 3'<M@' e3 ;6<A =' 166' B ?' A ' C<' G<;1 @' 9' C<' <I 6B 1 &' C1=' I !7 ' G;1 F<' CA@' A@ G <@' C<' A 1 A6' F 6 B;=&' A @' 9 B?C '1 ' C< 91;=' ?;<A ' DA 6<=' 1 ' EC1FC' C<' ;< FC' A; . =' @1= 1 ?B1=C<@' C< . =<6I<=' C< ' G; =F;1D<@' C<' CA@' > E ' C E ' G;<=<;I<&' D ' C<' A1@' 9' C1=' A6< =&' A ' C B;AD6<' 1 @<G< @< F<' C< ';< <= AD61=C<@' 1 ' C1=' 1 6<=' A @' @1? 10 1<=&' C<' ?AI<' C1=' = =' A' G GB6A;' <@BFA 1 &' 1<' CA@' D<< ' C<' 1 1 . A <' 9;1< @' 9' O< <;A6' &' A @' EA=' = 166' C<' 9;1< @' 9' C<' . < ' . =' < . 1 < ' 1 '61 <;A B;<&' =F1< F<&' A @' 9' C<' ;1DB <N' A @' C<' A6 <&' A9 <;' C<' C;<<' @A =" = ;B??6<&' AGG<A;<@' FAGAD6<' 9' ;A66 1 ?' ;A F<' D ' C<' 1 96B< F<' 9' C1=' A . <&' A @' ;<= ;A1 1 ?' C<' ;<I 6B 1 A; '96 @' EC1FC' EA=' ;<A@ ' ' DB;=' A66' D B @=' C1=' G1 1 ' EA=' CA ' 9' C<' @<GB 1<=' EC 'CA@' =G A < B=6 ' A==< . D6<@' A ' C<' +A6A1=' (B;D &' A @&' A ' C< =B??<= 1 ' 9' (< KA . 1 ' = A &' C< ' I <@' A' @<F6A;A 1 ' ' C<' <99<F ' CA ' C1=' A6' 1?C <==' C<' %B><' 9' ;6<A =' =C B6@' D<' ;<JB<= <@' ' G; F<<@' 1 . . <@1A <6 ' ' C<' FAG1 A6' 9 ;' C<' GB;G =<' 9' <P<;F1=1 ?' C<;<' C<' 9B F 1 =' 9' 1<B < A ' O< <;A6' 9' C<' >1 ?@ . Y' C<' @<F6A;A 1 'A ' C<' =A . <' 1 . <' <PG;<==<@' A' E1=C' CA ' C<' F 6 B;=' ;A1=<@' D ' C<' 1 =B;;<F 1 1= =' =C B6@' D<' ;< A1 <@' A=' C =<' 9' C<' A 1

' @<GB A 1 ' EC1FC' EA=' AGG 1 <@' ' FA;; ' C1=' @<F6A;A 1 ' ' C<' G;1 F<'9 B @' C1 . ' A ' C<' CT <AB' @<' <B1 &' C1=' B=BA6' =B . . <;' ;<=1@< F<&' A @' =BFF<<@<@' 1 ' I<;F . 1 ?' D1=' C<=1 A 1 ' <' G; . 1=<@' '? ' '+A;1=&' A @' CA@' C1=' AGG<A;A F<' C<;<' G;<F<@<@' D 'A' G; F6A . A 1 'A@@;<==<@' ' C<' 1 CAD1 A =' 9' C<' FAG1 A6&' 1 ' EC1FC' C<' ;<G<A <@' C<' E1=C' <PG;<==<@' D ' C<

5 %' ' , @<GB 1<=' [' ' E166' @ ' A66' ' FA &' C<' =A1@&' [' ' G;<=<;I<' B' <M@' DQ@' C' 7#@>+AF 9; .' F1I16' EA;' A @' A A;FC ' ' ' ' CJ' CA . D<;=' A;<' AD B ' ';<A==< . D6<&' A @' C< ' E166' F =1@<;' C<' . <A =' 9' . A>1 ?' C<' 6AE=' ;<=G<F <@' A @' . A1 A1 1 ?' C<' ;1?C =' 9' C<' A 1 ' C<' FCA; <;' E166' C< F<9 ; C' D<' A' ;B C ' C<' 9 66 E1 ?' @A ' C<' G;1 F<' < <;<@' +A;1=&' 1 . <' G;<==<@&' 9 ;' C<' 1 =B;;<F 1 A6' . I<. < '1 ' @<9< F<' 9' C<

Y ' 166< . A1 ' AD= A1 <@ 9; .' I 1 ?&' A=' C<' @1@' 'F =1@<;&' C<' =A1@&' CA ' C<' EA=' 9B; 1=C<@' E1 C' A ' AB C ;1 ' ' FCA ?<' A' @ A=

FCA; <;' C;<A < <@' <I<; ' . . < ' ' D<F . <' A' ;<GBD61FA ' . I<. < '
C<' ; A6'1 =1? 1A'E<;<' ;A . G6<@'B @<;'9 ('A @' <I<; EC<;<'E<;<'E;1 < '
' C<' EA66='1 ' ?;<A ' 6< <;=' C<=<' =1? 191FA ' E ;@=(' [' ' . ;<' (B;0
D ='N ;A F<' FC =<=' ' CAI<' A' <GBD61F' 3 C<' +6AF<' @<' 0 ;] I<' A @'1 ='
<1?CD B;C @' E<;<' 9166<@' E1 C' B . <; B=' ?; BG=' C<A <@' A @' <PF1 <@' D '
@< . A? ?1F' ;A ;=(' EC16= ' C<' DB= =' 9' @< . F;A =' 9' =1 1= <;' . < . ; , '
D<=G1<; ;<(' A;A (' A @' A1 SB= , E<;<' FA; ;1<@' C; B?C' C<' = ;<< =' '
C<' =A . <' 1 . <' C<' V <6' @<' 166<' EA=' FF G1<@' D ' . < '1 ' D6 B=<=' ;' E1 C'
A><@'A; . =(' D;A @1=C1 ?' C<1;'?B =' A @'=AD;<=(' A @' EC 'CA@'=<< ' E1 C' . BFC'
A ?<;' C<'1 = A66A 1 ' 1' C<' 1 . 1F1GA6' . . 1 <<' C<' 6A <;' <P<;F1#@'
C<1;'9B F 1 =' E1 C' @1991FB6 (' A @' 9A ' ?;<A ' ;1=>' 9' D<1 ?' I<;G E<;<@'
A9A < <' A6 <(' C; B?C' C<' G;<= 1?<' A AFC<@' ' C1=' A . <(' G;<=<; I<@'
= . <'AB C ;1 ' I<;' C<' B . B6 B B='A @' C;<A < 1 ?' . D'N DB (' =B; ; B @<@'
A @' <I< ' I<;G E<;<@' A=' C<' EA=' D ' <GBD61FA =(' C<' AGG<A;<@' A' G;< ' '
A' 9A A6'1; ;<= 6B 1 ' C<' FAB=<' 9' . A;FC1FA6' ? I<; . < ' =<< . <@' 6 '
FAGAD6<' 9' D<1 ?' =AI<@' D ' C<' 1 . . <@1A <' G;<=< F<' 9' C<' 1<B < A '
O< <;A6'N 9 ;'1 'EA=' F<; A1 ' CA ' C<; E1=<' A' <GBD61F' E B6@'D<' G; F6A1 . <@'
C<' @<GB 1<=(' 1 9 ; . <@' 9' C<' ;<A6' = A <' 9' A99A1;=(' G; F<<@<@' 1 ' A' D @ '
' C<' +A6A1=' A6(' EC<;<' C< ' ;<A@' ' 61<' G;1 F<' A' @<F6A;A 1 (' EC1FC'
C<' AGG; I<@(' ;<=G<F 1 ?' C<' <E' ?BA;A <<=' F6A1 . <@' 9 ;' #

7>+?@']_ >+C' 37B ; ' <M@+?@' S@+<' $+' L7B?@AA$B+' <B' <M@' \<@#' >?BB;L+ G<ME
DQ@'C8 7#@>$D
@<' 166<(' G< 1 ?' E1 C' = . <' @1991FB6 ' A' GA==A?<' C; B?C' A ' @<
A; . <@' A @' E;A C9B6' . B6 1 B@<' C<' %B><' @3 ;6<A =' C< '
I1=1 <@' C<' B 1F1GA6' . . 1 <<(' EC1FC' ;<=1? <@'1 =' G E<;=' 1 'C1=' CA @='
A9 <;' EC1FC' A9A < <' CA @<@' ' C<' @B><' A' ;1F 6 B;<@' 96A?(' F @BF <@'
C1 . ' ' A' DA6F (' A @' G;<=< <@' ' C<' A==< . D6<@' G< G6<' C<' 1<B < A '
O< <;A6' 9' C<' >1 ?@ . ' C<' G;1 F<' @1=G6A <@' C<' 96A?' A @' < . D;AF<@'
C<' 6@' ?< <;A6' A . 1@=' C<' AFF6A . A 1 =' 9' C<' . I<@' A @' AGG<A=<@' F; E@'
+; .' C1=' . . < ' C<' %B><' @3 ;6<A =' EA=' ;<F ? 1=<@' E1 C B ' GG =10
1 ' 1 ' +A;1=' A @' C<' @<GA; . < =' A=' C<' C<A@' 9' 61<' <E' O I<; 0
. < Y

C<' 8;@' 9' B?B=' CA@' D<< ' AGG 1 <@' D ' C<' 9A66< ' O I<; . < ' A='
C<' @A ' 9 ;' C<' G< 1 ?' 9' C<' CA . D<;='N C1=' @A ' CA@' A6;<A@ ' F . <(

I' 3'S@' ; >K' aDB<@'>' G@7K' S@##0Q+BS+' A>K$+ ' <M@' @+D$+@+@AA' B3'SM$?M ' MBS@G@7 ' M>A'
J@@+' B3<@+' ?B+<@A<@C ' >3>K@<<@ ' B+' L7@A@+<$+ ' <M@' DQ@' C(7#@>+A' <B' <M@' L@BL#@ '
>$C%P' @MB#C' <M@' J@A<' B3' @LDJ#$?A O

7"

A @ A ?;<A B . D<; 9 G<<;= A @ C . AK ;1 9 C @<GB 1<= E<;< 1 +A;1= C< F . . < F<@ C<1;=1 1 ?=& A @ C< 91;= FA;< 9 C< @<GB 1<= EA= ;< @<; C<FCA; <;CA; . 1 11=E1 C C< <E G =1 1 9 C<F 1 . ; D 1 ; @BF1 ?1 1 F<; A1 . @191FA 1 =& = . < 9 EC1FC CA@ D<< 6 ? @<=1;<@& EC16= C< C<;= E<;< E @< . A @<@ D GBD61F G1 1 ;GBD61F F6A . B;

C< CA . D<;& A C< =B??<= 1 9 < 9 1 = . < . D<;=& (W;A;@& I <@ C< 9 66 E1 ?;<= 6B 1 =), C< 9A . B= A; 1F6< 9 B; << @1=AGG<A;<@91; .' C< FCA; <;N C]' A C 61F ;<61?1 F<9<<@ D< ;<F ? 1=<@ A= C< ;<61?1 9 C< A <N C< 61D<; 9 C< G;<== EA= 1;;<I FAD6 <= AD61=C<@ D C< AD 61 1 9 C< F< = ;=C1G N C< CA . D<;= E<;< < @ E<@& <JBA66 E1 C C< . A;FC& E1 C C< 1 1 1A 1I< 1 C< G;<=< A 1 9 G; G =<@ 6AE= N 1 EA= @<F;<<@ CA ' . ;< F . 0 . 1==1 = A @ <P ;A ;@1 A; ;1DB A6= =C B6@ D< F;<A <@& A @ CA ' ;A F< =C B6@ ;<=B . < C< ;1F 6 B;<@ = A @A;@ N C< A?< 9 %<GB 1<= EA= 91P<@ A C1; & A @ C< @B;A 1 9 C<1; 991F< 91I< <A;= EA= A?1 <<@ CA C< F = 1 B 1 9 C< CA . D<; 9 +<<;= =C B6@ D< =< 6<@ A A&6A <; G<;1 @& A @ C< <91<F 9 C1= @<F1=1 EA= C< AD 61 1 9 C< C<;<@1 A; G<<;A?< 1 A66 & C< G;<A . D6< D EC1FC B1= : @<F6A;<@ CA C< ?;A <@ C< FCA; <; C1= =BDK<F = EA= =BGG;<==<@ A= 1 KB;1 B= CW CC$<$B+>#<(@1? 1 C< FCA; <;& CB= . @191<@& EA= 9 66 E<@ ;@+> KK GA; 1FB6A; < AF . < =& D EC1FC C< %<GB 1<= AD 61=C<@ A66 C< G<<;A?<= <= AD61=C<@ D CA;6<= : & A @ @<F6A;<@ CA 1 EA= <F<=0 =A; CA ;A F< =C B6@ D A1 D =<GA;A < 6AE=), CA A66 F;1 . <= 9 C< G;<==& A @ G 61 1FA6 F;1 . <=& =C B6@ D< =BD . 1 <@ C< KB@? . < 9 A KB; N C< ;<=G =1D161 93 11 1= <;= A @ C<; 0 I<; . < 991F1A6=N 8 C< ;< <6<F 1 9 %<GB 1<= G; . <@ =A6A;1<@ 991F<=N C< A BA6 I 1 ? 9 C< F 1 ?< 9 ; C< A; . N 7 C< ;?A 1MA 1 9 C< A 1 A6 OBA;@& A @ C<1; ;1?C A> GA; 1 C< AGG 1 . < 9 C<1; E 991F<;= N * C< 6<?A6 F 91; . A 1 D C< A < 9 991F<;= 1 C< A; . N 2 %<GA; . < A6 A @ . B 1F1GA6 1 = 1 B 1 = 9 B @<@ C< <6<F 1I< = = < . N C< 9;<<@ .' 9 <@BFA 1 N ! C< AD 61 1 9 C< @ BD6< I < 1 C< <6<F 1 9 %<GB 1<= C< AFF<G A F< 9 C< F61A; <; CB= @;AE BG EA= . A@< C< 9 ; . A6 F @1 1 9 C< <6<IA 1 9 C< G;1 F< C< C; <

C< . <A 1 . < C< 9B?1 1I< ; A6 9A . 16 & EC1FC CA@ ;< 1;<@ 9; .

<;=A166<=' ' A . D B166<(' A @' EC1FC' EA=' C;<A < <@' 1 ' C1=' 6A=' ;< ;<A ' D ' E< ' C B=A @' +A;1=1A =(' EC ' CA@' ;B ' ' A; . =' ' 9 ;F<' C< . ' ' 96 (' ADA @ <@' C1=' G6A (' A @' E< ' =6 E6 ' A @' 9 ;' C<' 6A=' 1 . <'1 ' <P16< Y' ' C<' * C' 9' B?B=' 1 ' < . DA;><@' D # ; 9 " A ' C<;D B;?' 9 ;' ?6A @' (<9 ;<' JB1 1 ?' ;A F<' CA;6<=' F1ED B;1# YY =< ' ' C<' CA D<;=' C1=' AD@1FA 1 (' A @' CA ' 9' C<' %AB ' FD1;1<=:A @ 9 G . (' C1=' = (' 1 ' 9AI B;' 9' C<' %B><' @<' (;@<ABP\' DB ' ECA <I<;' . A ' D<' C<' A@IA A?<' 1 ' A' ;<?B6A;' ? I<; . < ' 9' C<' G;1 F1G6<' 9'C<;<@1 A; ' ;1?C ' 1 ' C<' ;A = . 1==1 ' 9' C<' =F<G ;<(' 1 ' 6 ' CA=' AD= 6B <' F ; 6' I<;' C =<' ECG' A@ . 1 ' C<' @1'I1 <' ;1?C ' 9' >1 ?=(' A @' 1 ' ;@<;' CA ' C1=' G;1 F1G6<' =C B6@' D<' G;AF 1FA66 ' AGG61<@' A '5 C<' F6 =<' 9' A' =BFF<==9B6 ;<I 6B 1 (' 1 ' . B=' D<' A@ . 1 <@' A @' ;<F ? 1=<@' D ' C<' I1F ;=' C< . =<6I<=' ' C1=' FFA=1 ' 1 ' EA=' ' = (' A @' ECA ' C<;' G E<;' EA=' A ' C<' @1=G =A6' 9' C<' GA; 1=A =' 9' C<' C<;<@1 A; ' =BFF<==1 'c' C<' A6' 0BA;@' ' 6 ?<;' <P1= <@' \ A' G ; 1 ' j' C<' ; G=' 9' C<' 61 <' CA@' 9;A <; 1M<@' @B;1 ?' C<' F 0 961F ' E1 C' C<' A 1 A6' 0BA;@' A @' C<' G< G6<' \ . A ' ;<?1 . < =' CA@' @;1I< ' AEA ' C<1;' 991F<;=(' A @' A66' CA@' =G A < B=6 ' A@ G <@' C<' ;1F 6 B;(' A @' ?1I< ' 1 ' C<1;' A@C<=1 ' ' C<' <I 6B 1 ' ' C1=' = A <' 9' F . G6< <' @1= ;?A 1MA 1 (' 1 ' C<' . 1@=' 9' A' D6 @ = A1 <@' FAG1 A6(' 1 YEC1FC' ;A?<@' = ' . A ' 9B;1 =' GA==1 =' C = 16<' ' C<' <6@<=' D;A FC' 9' C<' (B;D =(' A @' <I< ' ' . A;FC ' 1 =<69(' C<' AFF<==1 ' 9' C<' %B><' @<' (;@<ABP' EA=' A' FC1 . <;A(' EC16=' C<' G; F6A . A 1 ' 9' C<' ; A6' 1 9A 1' E B6@' CAI<' G; I ><@' A ' 1; ;<=1= 1D6<' <PG6 =1 ' EC1FC' E B6@' CAI<' 6<@' ' C<' G; F6A . A 1 ' 9' A' ;<GBD61F' A @' A' F1I16' EA; ' C<' %<GB 1<=' C B?C ' CB=(' A @(' ;<K<F 1 ?' C<' F6AB=<(' 'EC1FC' CA;6<=' : ' A @' C<' %ABG611 ' CA@' A AFC<@' C<1;' AD@1FA0 1 (' FA66<@' ' C<' C; <' C1=' A6' 1?C <==' B1=' +C161K1G<' @3 ;6<A =' A @' C1=' . A6<' @<=F< @A =' 1 ' G<;G< B1 ' C<' +<<;=' 1 . . <@1A <6 ' A==< <@' ' C<' I1<E=' A @' AF =' 9' C<' C<;' CA . D<;(' A @' =A6I =' 9' A; 166<; ' A 0 B F<@' C<' ; A6' =1 1 ?' 9' C<' . ;; E' ' CA ' @A (' C<' ! C' 9' B?B= (' 8"(' C<' %B><' @3 ;6<A =(' AFF . GA 1<@' D ' F <=A1 ' c' # C1=' <6@<=' = =(' C<' %B><' =' @<' CA; <=' A @' @<' < . B;=(' BG;B=' AD(R)%/ 2%' .51) ' % 6*58) . .25% /5' / -)' +A6A1=' 5&*(5% ' F -)*))*)' A==< . D6<@' C<' +<<;=(' C<' %<GB 1<=(' C<' @1G6 . A 1F' F ;G=(' A @' B . <

Y' C<' +11 F<' @<' B@M(' EC ' EA=' . ;<' CA ' =<I< ' <A;= 9'A?<(' @1@' ' AFF . GA ' C1=' 9A . 16 ' 9; .' ;A F<' ' <' ;<F ? 1=<@' C<' <E' 0 I<; .< (A . 1' A' 9<E' @A =' A9 <;0 EA;@=' EA=' 9 B @' @<A@(' CA ?1 ?' ' C<' 9A= < 1 ?' 9' <' 9' C<' E1 @ E=' 9'C1=' D<@ ; .' C1=' @<A C' CA=' D<< ' A ;1DB <@' ' =B1F1@<(' C<' FAB=<' 9' EC1FC' 1=' B > E

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1= 6<== A C1= ; CA A =1 . G6< =>< FC 9 C< 6A= ;<1? EC1FC C<;<
G; G =< G;<=< C< ;<A@<; C<=< 1 . <= A;< F6 =< B= D<
=<< 1 A =B991F1< 6 F6<A; 61?C A @ 9 ; 1 . GA; 1A6 CA @= D< AD6< ;<. I< C< I<16= EC1FC CAI< D<< C; E I<; 9AF = D < CB=1A= . 1 0
<;<= <@ 9<<61 ?= ; C< G;<KB@1F<= A @ 1 . G6AFAD6< CA ;<@= 9 A C<; A?<
AI1 ? A;;1I<@ C E<I<; A C< F6 =< 9 . A=> =C B6@ D< A9;A1@ 9
6<AI1 ? 1 1 F . G6< < 19 A9 <; CAI1 ? =C E C< I1F1==1 B@<= EC1FC
CA@ G;<F<@<@ C< <= AD61=C . < 9 C< = 1 B 1 A6 A @ +A;61A . < A;
? I<; . < 1 ;A F< 1 8" @1@ A < . G ?1I< A D;1<9 @<=F;1G0
1 9 C< 1 . . < =< @1991FB6 1<= EC1FC 1 < F B <;<@ 1 C< =<F @ G<;1 @
9 1 = <P1= < F< C< ?;<A C1 ?= EC1FC 1 AFF . G61=C<@ A @ C< F1;FB . 0
= A F<= A @ 9AB6 = EC1FC FAB=<@ 1 = 9A66 E166 F 91 < . =<69 A;;A 0
1 ? C< G;1 F1GA6 9AF = A @ E166 6 < <; 1 @< A16= EC< C< A;<
1 @1=G< =AD6< A F . G;<C< =1 9 C< ?< <;A6 F B;=< 9 <I< =
C< <I 6B 1 9 SB6 1= A . ?= C =< 9 EC1FC C< ;<A= E166 D<
9<F ? 1=<@ D C< E1=< =G1;1 = 9 G = <;1 DB <I<;
G 61 1FA6 ; = F1A6 ;<I 6B 1 ECA <I<; . A D< 1 = FAB=<=

A @' E1 C1 ' ECA <I<;' 61 . 1 =' 1 ' . A ' D<' F 91 <@&' F A1 =' E1 C1 ' 1 =<69' @A ?<; B=' ?<; . =' 9' A?1 A 1 &' @1=F ;@&' A @' A A;FC 'N <PF1 <=' A ' 1 91 1 <6 ' ?;<A <;' B . D<;' 9' <I< ' 6<?1 1 . A <' @<=1;<=' CA ' 1 ' 1=' AD6<' '=A 1=9 'N G6AF<=' & 1 ' C<' ;A >' 9' C<' I1F ;=&' =1@<' D ' =1@<' E1 C' C =<' EC =<&' 6 ' @<=1;<' 1=' ' . A><' C<' ;1?C ' G;<IA16&' A66' C =<' EC ' A;<' 1 =G1;<@' . C' A' 9<<61 ?' 9' A 10 . =1 '9 ;' C<' = = < . ' 9' = F1A6' ;@<;&' <1 C<;' D ' . 1=<; &' A' =G1;1 ' 9' G;1@<& CA ;<@&' ;' < I &, C<' F; E@' D9' . < &' 1 '9AF &' EC ' <= << . ' C<1;' ;1?C =' F . 0 . < =B;A <' E1 C' C<1;' G;< < =1 =&' A @' EC ' F =1@<;' 1 ' = ' . BFC' C<' <A=1<;' ' I<; C; E' A' <E' ? I<; . < ' D<FAB=<' 1 ' CA=' 6 ' F = ' A' 9<E' <99 ; =' ' @<= ; ' CA ' EC1FC' =<< . <@' 91; . 6 ' <= AD61=C<@' D ' A' 6 ?' <P1= < F# C<' <I 6B 1 ' 9' 8"' @1@' ' <=FAG<' C<' G<;16=' EC1FC' A;<' . ;<' ;' 6<==' 1 F1@< ' 5A66' ;<I 6B 1 =N' DB ' EC16= ' C<' DK<F ' 9' C<' 6A <;' 1=' ?< <;A66 ' C<' I<; C; E' 9' <= AD61=C<@' 1 = 1 B 1 =&' C<' GB;G =<' 9' C<' <I 6B 1 ' 9' SB6 ' EA=&' ' C<' F ;A; &' C<' @<9< F<' 9' C<' F = 1 B 1 ' A @' C<' I1 6A <@' 6AE=' C1=' EA=&' @ BD 6<==&' A' ?;<A ' A@IA A?<&' DB ' 1 ' <I<; C<6<==' F F<A6<@' A' @A ?<;&' 9 ;' 1 ' @1=G =<@' . A ' < . 1 < ' . < ' EC ' CA@' A==1= <@' ;' =A F 1 <@' C<' E ;>' 9' SB6 ' ' . 1=F F<1I<' C<' A B;<' 9' CA ' ?;<A ' <I< &' A @' ' G<;=BA@<' C< . =<6I<=' CA ' 1 ' 6 ' ;< . A1 <@' ' ><<G' C<' I1F ;=' E1 C1 ' G; G<;' D B @=&' A @' ' ;<=B . <' ' C<' . ;; E' C<' F @BF ' 9' A99A1;=' A ' C<' G;<F1=<' G 1 ' A ' EC1FC' C<' G;<I1 B=' 0 I<; . < ' CA@' 6<9 ' C< . ' ' ?;<A ' A @' 9A A6' <;; ;' Z F1< ' CA@' D<< ' ' @<<G6 ' =CA>< ' D ' C1=' G; @1?1 B=' ;<IB6=1 ' ' A66 E' 1 ' ' GA=' I<;' E1 C B ' C<' F;<A 1 ' 9' <E' <F<==1 1<=' A @' 1 <;<= =&' A @' ?< C<;' E1 C' . A ' 166B=1 =' = . <' 6<?1 1 . A <' A @' ?;<A ' C G<=' C<' <I 6B 1 ' 9' 8"&' A6 C B?C' 1 ' CA@' 9 ;' 1 =' G;1 F1GA6' DK<F ' C<' . A1 < A F<' 9' C<' FCA; <;&' EA=' <I<; C<0 6<==&' EC< ' E<' F =1@<;' 1 =' 91;= ' FAB=<=' A @' 1 =' ?< <;A6' D<A;1 ?&' A' G E<;9B6' A @' A6 . = ' 1 . A 1 . JB=' ;<AF 1 ' 9' C<' F B ; ' A?A1 = ' C<' AF =' EC1FC' C<' 6A= ' 0 I<; . < ' CA@' AFF . G61=C<@' D ' C<' A1@' 9' C<' <6<F ;A6' A @' A;1= 0 F;A 1F' 6AE' 9' C<' @ ' ' C1=' ?;<A ' . I< . < ' EA=' 9AI B;<@' A @' AFF<6<;A <@' D ' A66' C<' 61D<;A6' A @' G GB6A;' C< ;1<=' <P 66<@' @B;1 ?' 919 << ' <A;=' D ' C<' . < ' 9' C<' 6<9 ' < ;<' A @' 9' C<' <9 &' E' 1 ' G E<;' =' G;1 F1G6<' EA=' < . 1 < 6 ' @< . F;A 1F&' 1 ' C<' D<= ' AFF<G A 1 ' 9' C<' E ;@' NY' A @' C1=' 9AF ' 1 ' EA=' <F<==A; ' ' A><' 1 ' AFF B &' A @' G<;16 B=' ' 9 ;?<

Y ' CAI<' A6;<A@ ' =A1@' CA &' 1 ' . ' < <=&' C<' G;1 F1G6<' 9' @< . F;A 1F' ? I<; . < ' ;<= =' ' C<' D61?A 1 ' ' <6<IA <' C<' . ;A6' = A B=' 9' C<' G< G6<=&' ' 1 F;<A=<' C<' ?< <;A6 F .9 ;&' A @' ' . A><' C<' ?;<A <=' G ==1D6<' B . D<;' 9' G<;= =' =CA;<;=' 1 ' C<' C< < =' 9' F1 I 161MA 1

C< <E' 0 I<; . < ' CB=' 9 B @' 1 =<69'G6AF<@ , #. ;<F . G6< <6 ('G<;CAG=(' CA ' A ' C<;' 0 I<; . < , #D< E<< ' C< @A ?<;' 9' <PA??<;A 1 ?' 1 =' G;1 F1G6<' A @' CA ' 9' @<=<; 1 ?'1 , 9' 6 =1 ?' 1 =' 9;1< @=' E1 C B ' ?A1 1 ?' IW;('1 ='A@I<;=A;1<=

;B<6' @<F<G 1 =' EA;@=' C<' E ;>1 ?' F6A==<=' 9 66 E<@' C<' <I 6B 1 ' 9' 8" ' C< ' E<;<' =<;1 B=6 ' 1 KB;<@' D ' C<' F . . <;F1A6' G<; B;DA 1 =(' C<' 1 <;;BG 1 ' '6AD B;(' A @' C<' = A? A 1 ' 9' A99A1;=(' EC1FC' A;<' C< 1 <I1 AD6<' ;<=B6 =' 9' A ' ;<I 6B 1 =('YA @' C< ' E<;<' 1;;1 A <@' A ' CAI1 ?' D A1 <@' 6 ' A ' 1 F;<A=<' 9'=B99];1 ?' A @' E;< FC<@ <==' 9; .' A ' <I< ' EC1FC' EA=' C<' ;<=B6 ' 9' C<1;' ' E ' I1F ; ' C<' <E' 0 I<; . < ' EA=' CB=' F @< . <@(' A ' 1 =' D1; C(' '@<9< @' 1 =<69' A?A1 =' C<' C = 161 ' 9' A' G ; 1 ' 9' C<' . A==<=(' E1 C B ' D<1 ?' AD6<' ' ;A66 ' ' 1 =' =1@<' C<' . =' F =<; IA 1I<' 9 ;F<=' 9' CB . A ' = F1< ' ' EA=' =BGG ; <@' <1 C<;' D ' C< <;;1 ;1A6' A;1= F;AF (' E611FC' EA='' A6 . =' EC 66 ' A AFC<@' ' C<' 9A66< ' '0 I<; . < (' ;' D ' C<' F6<;? (' EC =<' =<F;<' @1= ;B=' ;' G< ' C = 161 ' 1 ' CA@' A6 . =' 1 F<==A 6 ' ' F < @' E1 C ' 'CA@' ' = ;B??6<(' <I< ' A . ?=' C<' . 1@@6<' F6A==<=(' E1 C' . A ' GA; 1<=' <JBA66 ' C = 16<(' E1 C' C<' GA; 1=A =' 9' 6<?1 1 . AF ' ;' C<;<@1 A; ' =BFF<==1 (' E1 C' C<' <GBD61FA =(' E1 C' EC .' <;<' F 9 B @<@' C<' (AGA; 1= =(' A ' CA ' 1 . <' 9<E'1 ' B . D<;=(' A @' E1 C' C<' . < . D<;=' 9' =<F;< ' = F1< 1<=(' 1 ' EC1FC' E<;<' <6AD ;A <@' F . . B 1= .' A @' = F1A61= . (' A @' EC1FC(' A9 <;' CA ;1 ?(' A==1= <@' ' @<= ; ' <' 0 I<; 0 . < (' = B?C ' ' @<= ; ' A66' ' AGG<A;<@' D<9 ;<' A' . B6 1 B@<' 9' < < . 1<=(' 1 ' C<' . 1@= ' 9' A' G GB6A 1 ' I<;' <PF1 <@' D ' A' I1F ;1 B=' 1 =B;;<F 1 (' E1 C B ' C<' G;<= 1?<' <1 C<;' 9' ;A@1 1 A6' ;1?C ' ;' 6<?1 1 . AF (' ;' 9' C<' AB C ;1 ' 9' A' ?;<A ' A991; . A 1I<' A @' A 1 A6' I <(' EC1FC' 1 ' 1 . E1=<6 ' @1@' ' =<<>' ' D A1 ' =' <;; ;' 1 ' C1=' 6A <;' ;<=G<F ' EA=' = ' . BFC' C<' ?;<A <;' D<FAB=<' 1 ' E B6@' F<; A1 6 ' CAI<' D A1 <@' =BFC' A' I <' 19' 1 ' CA@' @< . A @<@' 1 (' A @' D<FAB=<' . A ' 9' C =<' EC ' CA@' F FB;;<@' E1 C' C< 6<F 1I<' CA . D<;' 1 ' G6AF1 ?' C<' @ A= ' 9' ;6<A =' ' C<' C; <(' @< 1<@' CA ' CA ' CA . D<;' G ==<==<@' C<' ?D= 6B <' ;1?C ' 9' @1=G =1 ?' 9' C<' F; E ' E1 C B ' 91;= ' AGG<A61 ?' ' C<' F B ; Y' _

I' ' > ;' G@7K' 3>7' 37B ;' AM>7$+ ' <M@' BL$+$B+' B3' BDAA@>+' S$<M' 7@AL@?<' <B' <M@' LBS@7' B3' +$G@7A>## AD337> @' '>+C' ' Q+BS' >## <M>' <' ?>+' M@' A>$C' S$<M' 7@AL@?<' <B' <M@' >JDA@A' >+C' C>+ @7A' SM$?M' SBD#C' 7@AD#<' 37B ;' $<A' C>$#K' >LL#$?><$B+' ?$<M@7' <B' 3B7@$ +' B7' CB ; @A<$?' >33>$7A' ,' J@#$@G@ EMBS@G@7' <M><' $<' SBD#C' M>G@' J@@+' S$A@' <B' M>G@' M><C' 7@?BD7A@' <B' $<' $+' 8"(' B+' <M@' B??>A$B+' B3' <M@' >??@AA$B+' B3' A' +@S' CK+>A<K' <B' <M@' <M7B+@ ' BD$A' QJ$#$LL@' M>C ' CBDJ<#@AA ' J@@+' >??@L<@C' >A' $<A' ABG@7@$ +' JK' 7>+?@ ' JD<' $+' +B<' M>G$+ ' <M$A' >??@L<>+?@' A>+?<$B+@C' JK' >' LBLD#>7' GB<@ ' M$A' ! BG? 7+ ; @+<' S>A' #@C' >A<7>K ' $+' ; K'

' (('

C 0 I<; . < 9 SB6 C;<A < <@ A= 1 EA= D = . A < < . 1<= E1 C1 CA@ A6= @<F6A;<@ A @ =<F;< < < . 1<= 1 . = 9 C< 9 ;<1? 0 I<; . < = EC1FC 6 ><@ BG 1 = <= AD61=C . < A= A @A ?<; A66 C; <= . ?= C< B; G<A + E<;= 1 CA@ DB < A66 0 ;<A (;1 A1 EC1FC EA= C< < ?A?<@ 1 C< ?;<A JB<= 1 9 1 = +A;61A . < 0 A; - <9J; . A @ EC =< = . GA C1<= E<;< < 61= <@ 1 9AI B; 9 A ;<I 6B 1 1 = . < ;<=G<F = A A6 ? B= CA IC1FC CA@ F 91; . <@ 1 = I 61D<; 1<= A @ G E<;

C< <E A;FC <F<==A;16 @<;1I<FD 1 = FC1<9 ;< ? C 9; . C< . 1@@6< ; F1 1M< F6A==9 ; EC . 1 B; E @A = C<;< CA= D<< = . BFC A99<F A 1 9 F < . G C1= F1 1M< F6A==1 . B= D< A@ . 1 <@ G ==<==<@ DB 61 6< D;<A@ C 9 I1<E A @ DB A I<; . @<;A < G;AF 1FA6 <PG<;1< F< 1 9;<< ? I<; . < 1 EA= <A=16 6<@ AEA D 'GA; 9<<61 ?= A @ AFF<==1D6< A= . BFC D ;<A= 9 1 = G;< < =1 = A= 1 = <F<==1 1<= C< =<@BF 1 = 9 G E<; E1 C B C< =A6B A; ;<= ;A1 9 ;<61?1 B= D<61<9 EC1FC D GB;19 1 ? A;1@ . @<;A 1 ? B; @<=1;<= 6<A@= B= 9 66 E C< GA C= 9 @B ;<=1? A 1 A @ =AF;191F< Y (B 9 C< C<; CA @ 1 EA= C< 99=G;1 ? 9 C = < . <; 9 A;@< A @ 61D<;A6 F I1F 1 = EC E<;< C< FC1<9 A?< = 9 C< G; @1?1 B= . I< . < 9 3 !N 1 EA= A P1 B= F 0 1 B< C<1; E ;> A @ 1 9 B @ 1 C< CA; <; A @ C< G;1 F1G6<= AI E<@ D C< <E 0 I<; . < C< 9A1 C9B6 <PG;<==1 9 1 = E1=C<= 61?C < <@ D 1 = 1 <;<= = 1 CA@ ;<F ? 1=<@ ;@<; A @ =<FB;1 A= C< I<; F @1 1 = 1 = <P1= < F< = ;A ?<; <I<; =G1;1 9 FA= < 1 CA@ @<91 <@ 61 . 1 DB EA= <I<; EC<;< D<1 ? F <F <@ D . ;< CA 61 >E1 C C< A;1= F;AF A @ CAI1 ? G; 9 B @ ;A . 191FA 1 = A . ?= C< EC 6< 9 C< 6AD B;1 ? F6A==<= 66 G E<;9B6 1 C< F1 1<= A @ E = 9 A 1 . G ; A F< 1 G ==<==<@ C< 6A;?<; G ; 1 9 C< . I<AD6< G; G<; 9 C< A 1 A @ ;<F> <@ A . ?= 1 = ;A >= C< . = < 61?C < <@ 1 <661?< A @ 1 96B< 1A6 . < 9 C< F B ; 6 I<@ 1 =<69 1 C< . A

BL$+$B+ JK <M@ @N> ; L#@ B3 + #>+C $+ , M$A S>A >' 7@>< @77B7 +' <M@ +@$ M1 JBD7$+ ?BD+<7K <M@ BDA@A B3 >7#$> ; @+< M>G@ >#S>KA >+C >< G>7$BDA L@7$BCA C$A1 LBA@C B3 <M@ ?7BS+ D< $+ 7>+?@ SM@7@ A$+?@ <M@ >??@AA$B+ B3 <M@ M$7C >?@ S@ 3$+C +B >+>#B BDA L7@?@C@+< >+ BL$+$B+ M>A J@?B ; @ @A<>J#$AM@C <M>< <M@ +><$B+ >#B+@ ?B+A+#<@C $+ > JBCK M>A <M@ 7$ M< <B C$ALBA@ B3 <M@ A?@L<7@ >+C ADJA<$<D<@ B+@ CK+>A<K 3B7 >+B<M@7 D7$+ <M@ 3$7A< ; B ; @+<A SM$?M AD??@@C@C <M@ C>KA B3 'D#K SM$#A< <M@ BK>#$A< L>7<K S>A >A $< S@7@ A<DL@3$@C JK $<A C@3@>< >+C DA<7$> M@#C >LB#@B+(A #$@$7 $+ $<A LBS@7 BD$A M$#$LL@ ; $ M< ?@7<>$+#K M>C M@ S$AM@C M>G@ C@7$G@C LBS@73D# ADLLB7< 37B ; D+$G@7A>#AD337> @ MBD M S@ ; >K A>3@#K C@?#$+@ <M@ DA@ B3 > DA@3D# S@>LB+ 3B7 BD7A@#G@A $< $A C>+ @7BDA <B #@>G@ $< $+ <M@ J>+CA B3 BD7 @+@ ; $@A

9'1 =' FC 1F<f 1 ' C<' AD6<' A @' <PG<;1< F<@' +;1 F<' IC .' 1 ' A@' ;A1=<@' ' C<' C; <'N A @' C<' <E' 0 I<; . < f EC1FC' >' 9 ;' 1 =' . ' ;@<;f 1D<; f A @' +<AF<f EA=' AFF<G <@' D ' 1 ' A=' C<' D<= ' ?BA;A <<' A?A1 =' C< =G1;1 ' 9';<I 6B 1 'A @' 9' F JB<= ' ';<= <@' BG ' A66' C<' C;<A < <@' 1 <;<= =' 9'= F1< f A @' G;<GA;<@' '= ;< ? C< ' 1 =<69' D ' . <A =' 9' A@ . 10 1= ;A 1I<' F< ;A61MA 1 f C<' 1 C<;1 A F<' 9' E ' F< B;1<=f A' G E<;' I<; ' @A ?<; B=' ' C<' CA @' EC1FC' . A><=' A' DA@' B=<' 9' 1 f A6 C B?CY' FAGAD6<f 1 ' 1=' ;B<f 9'= ;B??61 ?' 9 ;'= . <' 1 . <' A?A1 =' GBD61F' G1 1 'A @' ><<G1 ?' 1 ' B @<;f DB ' 1 I1 F1D6<' A @' 1; ;<=1= 1D6<' EC< ' =BGG ; <@' D ' 1

C1=' 0 I<; . < ' EA=' D B @f . ;<' CA ' A ' C<;f ' ;<=' BG ' A' DA=1=' EC1FC' . 1?C ' IA; ' AFF ;@1 ?' ' F1;FB . = A F<=f DB ' EC1FC' =C B6@' A6EA =' D<' A ' A ' <JBA6' @1= A F<' 9; .' <P ;< . <=' N A @' C<' G 61F ' 1 @1FA <@' D ' F1;FB . = A F<=' @< . A @<@' CA ' C<' . < . D<;=' 9' C<' 0 I<; . < ' =C B6@' D<' < @ E<@' E1 C' JBA61 1<=' EC1FC' A;<' ;A;<6 'B 1 <@' ' EA=' <F<==A; ' CA ' C<' 0 I<; . < ' =C B6@' D<f E1 C' ;<=G<F ' ' @ . <= 1F' A99A1;=f I<; ' 91; . f A @' @<F1@<@6 ' GG =<@' ' C<' =G1;1 ' 9' @1= ;@<;' A @' A A;FC 'N G; . G ' ' G;<I< 'A=' E<66' A=' ';<= ;A1 ' C<' AF =' 9' @< . A? ?B<=f A @' <I<; C<6<==' C< 9;1< @' 9' 9;<<' 1 = 1 B 1 =' A @' 9' G; ?;<==N I<; '= . GA C< 1F' E1 C' ;<=G<F ' ' C<' 6 ' 9' C<' 6AD B;1 ?' F6A==<=f A @' @<<G6 'A P1 B=' ' A . <61 ;A <' C<1;' . ;A6' A @' GC =1FA6' F @1 1 ' =' A=>' E1 C' ;<=G<F ' ' 9 ;<1? ' A 1 =' EA=' <JBA66 ' F . G6<P f 9 ;' 1 ' EA=' ;<JB1=1 <' CA '1 ' =C B6@' D<' A ' F<' G; B@' A @' . @<;A <f 61D<;A6' A @' < ' ;<I 6B 1 A; f GA ;1 1Ff D 6@' A @' < ' GAF191F' C<' @1991FB6 1<=' 1 ' C<' EA ' 9' C<' <E' 0 I<; . < ' E<;<' 1 . . < =<N DB ' AFF ;@1 ?' A=' C<' @ ><=' EC1FC' F B6@' D<' GG =<@' ' C<' A?1 A <@' EAI<=' A @' C<' ;A?<' 9' GA; 1<=' E<;<' C<' 6<==' = ; ?f D ' = ' . BFC' A=' 1 ' . ;<' 1 . G ; A ' CA ' C<' <E' ;@<;' 9' C1 ?=' =C B6@' CAI<' DA=<=' A=' 6A;?<' A=' G ==1D6<' A . ?=' C<' F6A==<=' . ;<' GA; 1FB6A;6 '1 <;<= <@' 1 ' . A1 0 A1 1 ?' 1 , A . <6 f C =<' EC1FC' 8"' CA@' G6AF<@' 1 ' G ==<==1 ' 9' G E<;f A @' 1 ' EC .' EA=' C<' ;<A6' 9 FB=' 9' GBD61F' G1 1 ' C<' 6A <;f EC1FC' ; B=' 'D<' F 9 . @<@' E1 C' . <;<' G GB6A;' 9AI B;f CA@' @ BD 6<==' <<@' 9' D<1 ?' < 61?C < <@'N DB ' 1 ' EA=f <I<; C<6<==f <F<==A; ' ' A><' 1 ' 1 ' AFF B f A @' A ' A ' F = ' ';A66 '1 ' ' C<' =1@<' 9' C<' 0 I<; . < ' C<' CA; <;f 91 A66 f F B6@' 'D<F . <' A' ;<A61 '19' C<' F B ; ' @1@' ' A><' A' ?< B1 <' =CA;<' 1 ' C<' F @BF ' 9' 1 =' E ' A99A1;=f A @' 19' C<' 0 I<; . < ' @1@' ';< . A1 '9A1 C9B6' '1 =' G;1 F1G6<' A @' . 1==1

BFC' E<;<' C<' G; D6< . =' EC1FC' C<' A;FC '9 B @<@' 1 ' 8"' CA@' ' 6I<f A @' =BFC' C<' F @1 1 =' 'EC1FC' A6 <' 1 ' F B6@' < @B;<' A @' 6A=

A . D1 1 ' 9 ;' G GB6A;1 ' E1 C' A' I<; ' =1 F<;<' 61D<;A61= . N DB ' C< ' E<;<' _
@<91F1< (' 1 ' ?< <;A6(' 1 ' CA ' G;AF 1FA6' =< =<' A @' CA ' =G1;1 ' 9' ;@<;' A @'
@1=F1G61 <' EC1FC' A;<' 6 ' AFJB1;<@' D ' <PG<;1< F<' 1 ' C<' F @BF ' 9' A99A1;=' A @' C ' CAD1 =' <1 C<;' 9' F . . A @' ;' D<@1< F<' <' 9' C<' . = ' @1= 1 0
?B1=C<@' 9' C< . ' EA=' ' @166 ' (A;; (' A' D;1661A ' ;A ;(' EC ' EA=' A=' < '
<E' ' C<' G 61 1FA6' A;< A(' A @' @<= 1 <@' ' D<F . <' C<' FC1<9' 9' A' G E<;9B6'
GA; ' 1 ' C<' GA;61A . < A; ' GG =1 1 ' ' C<1;' C<A@(' 91 A66 (' EA=' C<'
166B= ;1 B=' F1 1M< (' 1 ' EC .' E<;<(' 1 ' A' F<; A1 ' =< =<(' 1 FA; A <@' C<' G;1 0
F1G6<=' 9' C<' . <;1FA ' <I 6B 1 , 0< <;A6' A9A < <(' C<' . . A @<; '
1 C1<9' 9' C<' A 1 A6' 0BA;@=

B1=' +C161GG<(' A ' C<' F . . < F< . < ' 9' C1=' ;<1? (' @1=G6A <@' . BFC'
AD161 ' 1 ' =<6<F 1 ?' C<' . = ' 1 96B< 1A6' . < . D<;=' 9' C<=<' E ' GA; 1<=' '
9 ; . ' C1=' B F16 ' C<' . < ' 9' ;<=1= A F<' E<;<' C<' . ;<' B . <; B=' 1 '
C<' 91;= ' B F16' G;<=1@<@' I<;' D ' C<' 11 ?(' 1 ' EC1FC(' D '
#C<' =1@<' 9' %BG ' @<' 3 B;<(' C<' - <<G<;' 9' C<' <A6=(' =A 1;=' 1 1= ; (' 6e' A=' C61 1= <;' 9 ;' ;<1? ' 99A1;=(' ' OB1M (' 1 1= <;' 9' C<'
<;1 ;(' A @' ' @<' (; ?61<(' 1 1= <;' 9' +BD61F' = ;BF 1 ' A @'
61 # ;=C1G Y

C<' <P1= < F<' 9' C1=' 1 1= ; ' EA=' D;1<9' A @' A?1 A <@(' DB ' 1 ' G; I1@<@'
E1 C' 1 <661?< F<' A @' F B;A?<' 9 ;' C<' <F<==1 1<=' 9' 61<' . . < (' A @' 1 '
>' 61<' = <G=' BGG<;1 B=6 ' @< . A @<@' D ' C<' F 9B=1 ' A @' = A? A 1 ' 1 '
C<' = A <' 9' A99A1;=' ' 1 =' =B??<= 1 ' 91I<' . 1661 =' 9' 9;A F=' E<;<' I <@'
D ' C<' CA . D<;=' ' D<' @1= ;1DB <@' A . ?=' E ;> . < (' A @' C< ' I <@'
A' F;<@1 ' 9' C1; ' . 1661 =' A=' A' ?BA;A <<' 9 ;' 6 A =' A @' A@IA F<=' 'G<;= =' < ?A?<@' 1 ' F . . <;F<' C<;' B;?< ' 6AE=' E<;<' G;<GA;<@(' A @' C<'
AD1 <' A ' C<' =A . <' 1 . <' FA; ;1<@' ' AF 1I<' <? 1A 1 =' E1 C 9 ;<1? '
G E<;=' BFF<==' F; XI <@' 1 =' <99 ; =(' A @' C<' <E' A;FC ' EA=' ;<F ?0
1=<@' D ' A66' C<' G E<;=
' I<; ' =<;1 B=' <I< (' C E<I<;(' FFB; ;<@' ' G6AF<' C<'
G<AF<' 9' B; G<' 1 ' G<;16' (<6?1B . (' EC1FC' CA@' D<< ' B 1 <@' -< Alc`
' C<' %B FC' <; ;1 ; ' D &' C<' ;<A I<=' 9' 7(' CA@' 6 ?' @L<@ ; J@7 ' , 2
=1 F<' D<< ' 1 ' A' = A <' 9' @1=F < ' %;1I< ' ' ;<I 6 ' D ' C<' 1 . G;B@< '
A @' GG;<==1I<' F @BF ' 9' - 1 ?' 1661A . (' 1 ' =<I<;<@' 1 =' F <P1 ' E1 C'
A @' ' C<' DK<F ' 9' C<' 661<@' + E<;=' 1 ' <= AD61=C1 ?' C<' >1 ?@ .

I' +' <M$A ') $+$A<7K ' ! @+@7>#' ! H7>7C' M>C' <M@' LB7<3B#$B' B3' >7 ' ! @+@7>#' @M>A<$>+$' B3') >7$+@ ' >+C' <M@' >7B+' BD$A' B3' $+>+?@ ' M@7@' S@7@' 3BD7' ; $+$A<@7A' S$<MBD<' LB7<1 3B#$B%) @AA$@D7A' ' '>?aD@A' >33$<<@ ' >A$; $7' H7$@7 ' DL$+' <M@' @#C@7 ' >MC' $ +B+

9 C E B ;1=CA@ D<< F;<A 1 B; G A DA;;1<;A?A1 = ;A F N 9 C G;1 F1GA6 AFC1<I<. < = 9 C ?;<== 9 1< A CA@ D<< 3A 1C16A <@ D C1= <I 6B 1 A @ C <E= 9 C 6A <;C<;<9 ;<EA= ;<F<1I<@ D ;A F E1 C < CB=1A=. C ;< FC 0 I<; .< 9 66 E<@ A CA 1 . C 6 GA C 1 @1FA <@ D F11FB . = A F<= A @ GBD61F G1 1 A @ - 1 ? 61A . CAI1 ? @<. A @<@ C A==1= A F 9 C +;B==1A ; G= 6W GB 9 ;EA;@ C @ F ;1 9 1 <;I< 1 A @ FC<F><@ C A@IA F 9 C +;B==1A A; . D @<F6A;1 ? CA 19 1 =< 9 C (<6?1A <;;1 ; C ;< FC A; . E B6@ < <; 1 A6= G;<I< A B; G<A EA; C 0;<A + E<;= C<;<BG A?;<<@ 9<;< F< 9 D< E<< 66A @ A;1@ (<6?1B . 9<;< F< > @ G6AF< 9 ; C1= GB;G =< 1 @ A @ B1= +C161GG< =< +;1 F< A66< ;A @ ;<G;<=< ;A F<

C16= C< G =1 1 9 A99A1;= EA= CB= @1= B;D<@ AD; A@ 1 EA= = 1 . ;< A6A; . 1 ? A C . < C< <F<==1 9 ; C< ;< <= AD61=C . < 9 ;@<; CA@ 6<@ C< F;<A 1 1 <I<; GA; 9 C< >1 ?@ . 9 DA A61 = 9 C< A 1 A6 0BA;@ C< 6A <; E<;< F 1 BA66 ><G @1< A6<; D K C< F6BD= / ! A @ G GB6A; . A 19<= A 1 = < 9 EC1FC 1 +A;1= EA= C< =1? A6 9 ; C< . = 6A . < AD6< @1= ;@<;= C< F F6B=1D 9 A <PG1A ; F<;< . F<6<D;A <@ C< +6AF< @< 0;]I< 1 C B; 9 C< . < . ; 9 C< 9 B; B 9 ; B A < =<;?< = 9 FC<66<C A G< 1 1 9 ; C< AD 61 1 9 FAG1 A6 GB 1=C . < EA= F1;FB6A <@ C; B?C C< F; E@ 1 EA= F I<;<@ E1 C =1? A B;<= A @ C< CA . D<; 9 %<GB0 1<= =A F 1 <@ C< E1=C EC1FC 1 <PG;<==<@ ;B . B; =G;<A@ AD; A@ CA C1= G< 1 1 CA@ D<< 1==B<@ A C< 1 = 1?A 1 9 C< 0 I<; .< 9 ; C< GB;G =< 9 =AI1 ? C< 1 1= <;= 9 CA;6<= : EC CA@ =1? <@ C< @<F;<<= 9 SB6 + B; 9 C<=< 1 1= <;= , @< + 61? AF @< CA <'5 6ABM<C @< +< ; < A @ 0B<; @< A I166< , CA@ D<< A;;<= <@ A @ 1 . G;1= <@ 1 1 F< <= A @ C< B; 9 +<<;= EA= AD B ; C< . C< =B=G1F1 9 C1= . A <BI;< C< GA; 9 C< 0 I<; .< <PF1 <@ .B1 =1 9ABD B ?= A @ G; @BF<@ 9 ; . 1@AD6< / ! 1 EC1FC >7$A E<;< C<A;@ F;1<= [%<A C < C< 1 1= <;= C< G;<9<F 9 C< <1 < @166 (A;; F< =B;<@ C< I < 9 C< %<G19 1<= 1 9AI B; 9 C< AD 61 1 9 FAG1 A6 GB 1=C . < A=1 KB@10 F1 B= A @ EC< C;<A < <@ E1 C @<G;1IA 1 9 C1= 991F< EA= =BGG ; <@ D =<I<;A6 9 C< 1 1= <;= 1 GG =1 1 C<1;? F 66<A?B<= C<;< EA= @1=F ;@ C<;<9 ;< 1 C< C1?C<= ;<?1 = 9 G E<; N C< 6<F 1I< CA . D<;

9 9 S' ' ' 9 . ,

G;<=1@<@' I<;' D ' A=1 . 1;' +W;1<;(' EA=' EAI<;1 ?(' A @' +A;1=' EA=' 1 ' A' = A <' 9'GA; 1A6' 1 =B; ;<F 1 ' EC< ' C<' ;1A6' 9' C<' 1 1= <;=' EA=' AD B ' ' F . 0 . < F<' C<' - 1 ?(' 1 ' C<=<' F;1 1FA6' F1;FB . = A F<=(' C B?C ' 1 ' G;B@< ' ' 9 ; .' C1=' B F16' 9' . < ' EC =<' G1 1 =' E<;<' C =<' 9' C<' . A==<=(' A @' ;<=< . D6<@' C =<' 9' <AFC' C<; ' <' G<;F<1I<@' C<' <F<==1 ' 9' CAI1 ?' ;<F B;=<' ' . < ' G ==<==<@' 9' ?;<A ' G GB6A;1 ' 9 ;' C<' GB;G =<' 9' ;<=1= 1 ?' C<' G GB6A;' ; ;< (' A @' AFF<G 1 ?' C<;<9 ;<' C<' ;<=1? A 1 ' PC< A991 A' 9' ' @<' (; ?61<(' OB1M (' A @' B1=(' C<' . A@<' ' SAFJB<=' 1 1= ; ' A991 <' 1 1= <;' 9' 1 A F<' A @' +;<=1@< ' 9' C<' B F16 Y C<' C<A@' 9' C<' <E' 1 1= ; (' A' DA ><;' F<6<D;A <@' 9 ;' C1=' @<I 1 ' (' A @' <PG< @1 B;<' 1 ' 9AI B;' 9(' C<' 61D<;A6' FAB=<(' EA=' 1 ' ?;<A ' 9AI B;' D C' E1 C' C<' - 1 ?'A @' C<' F1 1M< ' F6A==<=' ' =<;IA 1I<' D ' 1 = 1 F ' A @' G =1 1 (' ' A991 <' EA=' <I<; C<6<==' F6 =<6 ' F <F <@' E1 C' C<' GA; ' 9' . I< . < ' D ' C1=' 1 . . < =<' F;AI1 ?' 9 ;' G GB6A;1 ' <' EA=' E<66 1 9 ; . <@(' 9AF16<' 9' =G<<FC(' A @' . = ' A99AD6<' 1 ' . A <;'N DB ' C<' EA=' @<91F1< ' 1 ' 91; . <==(' . @<;A 1 (' A @' <PG<;1< F<' C<' ;1A6' 9' C< # 1 1= <;=' EA=' A ' C1=' G<;1 @' C<' . = ' =<;1 B=' A99A1;' ' CA @(' 1 1= <;=' 9 A @' EC16= ' 1 ' 6A= <@' @1= B;DA F<=' 1 ' +A;1=' F 1 B<@' CA;6<=' : ;A?<' E1 C' A' 9<; F1 ' EC1FC' FA66<@' ' . 1 @' C<' . = ' 9A A6' @A =' 9' 61< <I 6B 1 ' A6 .' 1 ' C<' . 1@= ' 9' C1=' 9;1?C 9B6' F;1=1=(' A @' B A 1 . B=6 ;<9B=1 ?' ' GA==' A' FAG1 1 1' =< < F<(' C<' B; ' 9' +<<;=' F @< . <@' ' @< +D61? AF' ' ;A =G ; A 1 (' A @' C1=' C;<<' F 66<A?B<=' ' G<;G< BA6' 1 . G;1= . < 6' (B ' A' =AIA?<' . D' @< . A @<@' C<1;' C<A@=(' A @' C;<A < <@' 1 961F ' C<' . = ' @<=G<;A <' B ;A?<=' ' C<' G;1= <;=' A @' C<1;' KB@?<=(' A @ 1 =' ;A?<' EA=' E1 C' @1991FB6 ' C<6@' 1 ' FC<F>' D ' C<' A 1 A6' # OBA;@' A @' C<' B C=' 9' C<' =FC 6=(' EC ' ;A661<@' ; B @' C<' R[ABF<= . B 1F1GA6' AB C ;1 1<= ' C<' 1 1= <;' 9' C<' <;1 ;' A @' O< <;A6' A9A < <)*)' 75*) ' 5./>' 2%' ./*2+2%4' /5' 3)7)%3' /-)' 85%3) ' %)3' ')%' 0%3' 75*' /-2. GB;G =<' D6 ' ;1=><@' C<1;' 61I<=' C< ' 6@' CA ' C<' E B6@' G; DAD6 15.)' -2.' 656&10*2/,' 27' 12)' 0//) ' 6/)3'!/5' .0+)' /-)' ' 2%2./)*.' 070,)//) ;<G61<@ (*' + GB6A;1 ' 1=' A' G;<F1 B=' G ==<==1 (' EC1FC(' 61><' A66' C<; G ==<==1 =(' E<' =C B6@' D<' ;<A@ ' ' <PG< @' 1 (' C<' GBD61F' =<; I1F< N C<1; <99 ; =' E<;<' =BFF<==9B6'N +A;1=' EA=' G;<=<; I<@' 9; .' C<' C ;; ;=' 9' A' <E

I') 'C@') B+<>#$G@<' 7@L#>?@C') ' ! D$VB<' >A') $+$A<@7' B3' <3$@' +<@7$B7'] , ') B#C' S>A' AD??@@C@C' >A') $+$A<@7' 3B7' B7@$ +' 3$>$7A' JK') >7AM>#') >$AB+]' >+C' ! @+@7>#' ! H7>7C' 7@A$ +@C' <M@' LB7$3B#$B' 3B7' >7' <B') >7AM>#' BD <

' #D' <M$A' ; @ ; B7>J#@' <7$>#' <M@' 7$+?@' C@' B#$ +>?' S>A' C@3@+C@C ' >' M$A' BS+' 7@aD@A<' MK' <M@' ; $+$A<@7' SMB ;' M@' M>C' 7@L#>?@C ') 'C@') >7<$ +>?

9 9 1 " I @

A;=AE A @ 1 = FAG1 A6 D<61<I<@ CA C< E<;< 9;<<@ A @ C< @< C; <0
. < 9 C< . A 99= EA= =C ; 6 A9 <;EA;@= @<F6A;<@ D C< %1<
; A F< C<=< ?;<A <I< = E<;< = . GA C1M<@ E1 C D A6 . = A66
F6A==<= 9 C< G GB6A 1 C< <PF1 <@ <=G<F1A66 A . ?= C< . < 9
. I< . < A;@< A @ < CB=1A= 1F 1@<A=A @ G; I ><@ D<661F =< . A 1
9<= A 1 = C< GA; 9 C =< EC A==B . <@ CA C< A6 < E<;<
< 1 6<@ C< C B;AD6< AGG<66A 1 9 GA ;1 = C< 6A <; E1=C<@
CA ;A F< =C B6@ =1 . B6 A < B=6 GG =< B==1A a E G;<GA;1 ? 9A66 BG + 6A @b B= ;1A C< 9<;< F< 1 @ A @ C<
+ G<M A @ 6 B@6 @< . A @<@ EA; A A 1 . < EC< ;A F< CA@
6 A @1= ;?A 1M<@ A; . EC< 1 = 91 A F<= E<;< 1 C< E ;= G ==1D6<
= A < A @ EC< 1 = F;<@1 EA= A C< 6 E<= <DD 1= C< C B; 9
B1= +C161GG< CA C< < <;?< 1FA66 GG =<@ 611= @A ?<; B= F B;=< A @
CA B 1I<;=A6 =G1;1 9 G; GA?A @1= . E1 C EC1 C = . < . < . D<;= 9 C1=
AD1 < E<;< 1 =G1;<@ A @ 1 EC1FC ;A=C 1 F61 A 1 = E<;< . 1 ?6<@ E1 C
C< GB;<= =< 1 . < =< A @ D6< E1=C<= 1 C< FAB=< 9 C< GG;<==<@
A @ 9<<D6< < @1@ C1= @B D <? 1A 1 ? 1 C<1; 9AI B;< A @ D
AD= A1 1 ? 9; . C;<A < 1 ? @< . = ;A 1 = EC1FC < CAI< D<< 1
<99<F BA6 . B= CAI< D<< 9 66 E<@ D C< ;<I 6B 1 A; . <A=B;<= 9 A
=1 1= <; <G FC

C< <P1= < F< 9 A i A < 9 EA; A66 C< ;< FC 9; 1<;= CA@ ?1I< A 9;<=C 1 . GB6=< C< I 6FA EC1FC EA= DB; 1 ? 1 C< 1 <;1 ; A @ EC1FC EA= F 1 BA66 C; E1 ? A B @ 1 = . D;< ?6<A . = A @ DB; 1 ? 6AIA DB;= 9 ; C E1 C ;< <E<@ I1 6< F< 1 +A;1= C<
8 C <D;BA; 8 C< F<6<D;A 1 9 A 9B <;A6 =<; I1F< =A1 9 ; C< %B>< @< (<;; A A1 O<; . A1 3 BP<;; 1= D A <;; 1= A @ D< ?;<A B . D<; 9 C< GA; 1=A = C< 6A < ! EC E 7BMJ$>JBL(A >$>?@ @J7D>7K D<?A D F . . 6 FA66<@ A;61= A ; <?1 1 . 1= = . <
9 61< G<;= A EC > GA; 1 C< F<;< . E1=C<@ ;< @<; 1 A G 61 1FA6 A @ F B <; ;<I 6B 1 A; @< . = ;A 1 A @ 61< G1F B;< 9 C<
B ? C<1; 9 C< <6@<= D;A FC ;<G;<=< <@ A= < ; A EA= 1 . G;B0 @< 6 Q@1=G6A <@ 1 C< FCB;FC D<9 ;< C< F; E@ A==< . D6<@ C<;< C< ;<G ; 9 C1= F1;FB . = A F< =G<<@16 =G;<A@ A @ EA= 61< =1? A6 9 ; A 91<;F< ;1 E C1FC C< AB C ;1 1<= . 1?C 1 A66 G; DAD161 CA I< D<< AD6< G;<I< A @ EC1FC C< E<;< =6 E =BGG;<== C< FCB;FC A @ C< =AF;1= E<;< =CA . <9B66 G166A?<@ C< 9 66 E1 ? D1 ; 1 ? C< F; E@ ;B=C<@ C< A;FCD1=C G3= GA6AF< EC1FC C< @<= ; <@

9; .' G' &D .(' A @' C< F<' CB;;1< 'nG' C<' FCB;FC<=' A @' GA6AF<=' ' <A;' @ E ' C<' F; ==<=' 9; .' C<' E<;=(' .B 16A <Y' C<' ; A6' 1 =1? 1A(' A @' F .G<6' C<' A;FC' C1 . =<69'& ' ;<GB@1A <' C1=' ?6 ;1 B=' D6AM

C<' CA . D<;=(' KB= 6 ' 1 @1? A (' C<6@' C<' 0 I<; . < ' A @' C<' . 1 . 1F1GA6' AB C ;1 1<=' ;<=G =1D6<' 9 ;' C<=<' @1 B=' A @' DA;DA; B=' AF =(' A @' A ' C<' F F6B=1 ' 9' @<DA <=' EC1FC' E<;<' A=' = ; . ' A=' C< ' E<;<' @1=?;AF<91@(' C<' E ' G;<9<F =' 9' +A;1=(' (AB@<' A @' @166 ' (A;; (' E<;<' @<G;1I<@' 9' C<1;' 991F<=' ' C<' =A . <' 1 . <' C<' %<GB 1<=' C< . 0 =<6I<=(' 91 @1 ?' CA ' C< ' E<;<' AFFB=<@' 9' 1 . . @<;A <6 ' G; 6 ?1 ?' C<1;' G ==<==1 ' 9' 991F<(' A @' E<;<' C<' DK<F ' 9' I1 6< ';<F;1 . 1 A 1 =(' AF66 E ' 6<@?<@' CA ' C<' < @' 9' C<1;' . 1==1 ' CA@' A;;1I<@(' A @' G< <@' C<' EA ' 9 ;'

#@?<B7>#'#>S

C<' 9 ; . A 1 ' 9'A' <E' CA . D<;' D ';< . @<661 ?' C<' <6<F ;A6' 6AE ' C1=' 6AE' AD 61=C<@' C<' @ BD6<' I <(' ;<@BF<@' C<h' A . B ' 9' AP<=' C<' GA . < ' 9' EC1FC' JBA6191<@' A' . A ' ' D<' <61?1D6<' A=' A' . < . D<;' 9' C<' CA . D<;' 9' %<GB 1<=' ' 91I<' CB @;<@' 9;A F=(' A @' ?AI<' C<' <6<F ;A6' I <' ' A66' EC ' GA1@' E ' CB @;<@

C<' 9;1?C 9B6' =F< <=' EC1FC' CA@' A><' G6AF<' 1 ' +A;1=' E<;<' ;<G<A <@' 1 ' . A ' 9' C<' @<GA; . < =N C< ' E<;<' ;< <FC <@' 1 ' C<' . =' @<G6 ;AD6<' . A <;' 1 ' =<I<;A6' GA; =' 9' B; G<(' A @' ' . A ' FAB=<=' 9' @1=F < b' ; BD6<(' A @' @1=JB1< B@<' E<;<' A@@<@' C =<' A;1=1 ?' 9; .' C<' A6A; . 1 ?' = A <' 9' C<' 91 A F<=' 6;<A@ (' 1 ' C<' DB@?<' G;<=< <@' D ' ' A991 <' D<9 ;<' C<' 6A= ;<F B <@' <I< =(' C<' <PG< =<=' 9 ;' 8 ' E<;<' =<' 9 ; C' A=' A . B 1 ?' ' < ' C B=A @' <' CB @;<@' A @' =1P =<I< ' . 1661 =(' 91?B;<=' E'C1FC' <PF<<@<@' D ' AD B ' C;<<' CB @;<@' . 1661 =' C<' 6A=' DB@?<' 9' C<' <= ;A 1 N A @' C1=' 1 ' 1 =<69' EA=' A ' 1;;<9B AD6<' A @' =A@' G; 9' 9' C<' <PG< =<' 9';<I 6B 1 =(' <I< ' EC< ' C< ' A;<' 6<?1 1 . A <' A @' <F<=0 =A; ' ' A' 6A <;' G<;1 @(' ' C<' <I<' 9' C<' @1== 6B 1 ' 9' C<' CA . D<;' A @' C<' AD1 <(' ' A991 <' @< . A @<@' A' =BGG6< . < A; 'F;<@1 ' 9' E 'C1 . ' @;<@' . 1661 =' 9 ;' C<' GB;G =<' 9' . << 1 ?' C<' <P ;A ;@1 A; ' <F<==1 1<=' 9' C<' A <N A @' C1=' =BGG6 ' C<' 6 ' D A1 <@' E1 C' . BFC' @1991FB6 ' A ' C<' CA @=' 9' A ' B <A= ' A @' A ?; ' . AK ;1 ' C1=' 1 1= <;(' EC ' CA@' = ' 6A <6 ' D<< ' ;1FC(' . A? 191F< (' A @' G GB6A;(' DB ' EC ' EA=' E' =<;1 B=6 ' 1 KB;<@' 1 ' C1=' G;1I A <' 9 ; B <(' A @' CA@' 6 = ' C1=' 9AI 1P;' E1 C' C<' G< G6<' > ' E<66' A=' E1 C' C<' - 1 ?(' G<;F<1I<@' CA ' G E<;' EA=' <=FAG1 ?' 9; .' C1=' ?;A=G(' DB ' F 16@' ' G<;=BA@<' C1 . =<69' ' ;<=1? ' 1 ' C<' = A <' 9' A A;FC (' C E0 <I<;(' . A@<' 9;1?C 9B6' G; ?;<=='N C<' # ' EC1FC' EA=' E' G<; . A < ' 1

+A;1=' @1= B;D<@' D<' G;1 F1GA6' F1 1<=' 1 ' C<' >1 ?@ . (' A @' GA;A6 =<@
5 ' ')*8)'A @' 1 @B= ; ' C<' <I16(' 1 ' 9AF (' EA=' A '1 =' C<1?C (
A @' C<' I<; '<P1= < F<' 9' C<' . A;FC '=<< . <@'1 'G<;16(' EC<
C<' -1 ?' < ;B= <@' ' A=1 . 1;' +*;1<;' C<' 9 ; . A 1 ' 9'A' <E' 1 1= ;
' C<' <E' AD1 < (' EC1FC' EA=' G;<=1@<@' I<;' D ' A=1 . 1;'
+#;1<;' A=' 1 1= <;' 9' C<' <;1 ;(' C<' G;1 F1GA6' G ; 9 61 = , ' A;FC'1=(' 1==1'
C =<' 9' SB= 1F<(' ;<1? ' 99A1;=(' A;(' A @' 1 A F< , E<;<' F 91@<@' '
' (A; C<(" <DA= 1A 1(' 116 (' A @' (A; ' B1= Y' C<' C<A@' 9' C<'
AD1 <'CA@' D<< '9 ;'919 << ' <A;=' <' 9' C<' . ='< . 1 < ' . < . D<;=' 9'
C<' 61D<;A6' GA; ' ; ?6 ' GG =<@' 'A;D1 ;A; 'G E<;' B; '1 96B< F<=(' A @' C<' 6@' = = < .' 9' C1 ?=(' C<' EA=' <JBA66 'AI<;=<' '@1= ;@<;' A @' A A;FC N' C<' E1=C<@'9 ;' A' = ; ?' 0 I<; . < '=BGG ; <@' D 'KB= '6AE=N' C<'
A=' ;<= 6I<@' ' . A><' C1=' G;1 F1G6<' ;1B . GC(' A @' ' C1=' A=>' C<' D; B?C '
A' . 1 @' EC1FC' EA=' ;A C<;' KB= ' CA ' <P < =1I<(' A' E166' 9' 1; (' A @' A'
DB; 1 ?' F B;A?<(' EC1FC'1 =G1;<@' A 'C <= 'A @' ;<= 6B <' C<A; 'E1 C' A' < =<
9'@B 'A @' A' F < . G '9 ;' G GB6A;1 ' +<;1<;' 6A1@' D<9 ;<' C<' CA . D<;='
A' = A < . < ' 9' C<' GD61F 'C<' 1 < @<@' ' GB;=B<N @< . A @<@' A' I <' 9'
F 91@< F<' 9 ;' C<' GB;G =<' 9' < AD61 ?' C1 . ' ' GA==' C<' G; I1=1 A6'
F6AB=<=' 9' C<' DB@?< N A @' E1 C' C<1;' F FB;;< F<' >' < <;?< 1F'
. <A=B;<=' 9 ;' C<' ;< <= AD61=C . < ' 9'<JB1 D;111 .'1 ' C<'91 A F<=' A @' G<AF<'
1 ' C<' = ;<< ='' C<' 6<F 1I<' CA . D<;' EA=' = 'A9 <;EA;@=' @1= 6B 1 ' 9'
A@K B; <@(' A @' C< '@1== 6I<@' a8" C' G;16b(' EC<;<BG ' C<'
-1 ?' F I ><@' C<' <6<F ;A6' F 66<?<=' 9 ;'5 C<' 9 66 E1 ?'
. C' 9' SB6 ' A=1 . 1;' +*;1<;' E1=C<@' CA ' C<' <E' CA . D<;' =C B6@'
9A1 C9B66 ' ;<G;<=< ' C<' G1 1 =' 9' C<' F 1 . ; ' <' A?;<<@' CA ' C<'
0 I<; . < ' . 1?C '6<?1 1 . A <6 '< . G6 'A' F<; A1 'A . B ' 9' 1 96B< F<'9 ;'
C<' GB;G =<' 9'A==1= 1 ?' C<' <6<F ;=' ' . A><' A' E1=<' B=<' 9' C<1;' =B99;A?<(' DB '1 ' C1=' <6<F ;A6' 1 = ;BF 1 =' C<' ?BA;A <<@' CA ' C< '=C B6@' D<' A '
G<;9<F '61D<; ' ' I <' A=' C< 'G6<A=<@(' A @' CA ' C<' ;1?C =' 9' F =F1< F<'
=C B6@' D<' C<6@' 1 I1 6A <' 1=' F @BF ' 1 ' C1=' ;<=G<F ' @1@' ' ?1I<' A'
FA @A6 B=' A @' @A ?<; B=' 61<' 'C1=' E ;@=
C<' @A ?<;3=' EC1FC' <P1= <@' E1 C1 ' C<' >1 ?@ . ' E<;<
5 ' 61280/)3' F2/-' 5/-)*.' F-28-' /-*)0/)%)3' 2/' 0'(*503' 0%3' NLBA$<$B+'B3'<M@
C<' +;<=1@< ' 9' C<' B F16' CA@' A6;<A@ ' G;<=< <@' C< L7$+?$L#@A' B3
#B7@$ +' LB#$?KE

I')' C@')B+<>#$G@<' L>AA@C' 37B ;' <M@')$+$A<7K' B3'<M@' +<@7$B7' <B' <M><' B3' DJ#$?'
$+A<7D?<$B+'>+C' B7AM$L

CA . D<;' 9'%<GB 1<=' I1C'A ' B 61 <' 9' C<'F B;=<'C<'1 < @<@' 'GB;=B<' 5E1C';<=G<F ' '1;;1 A <@' B; G<'1 ' C<=<';< . A;>AD6<'E ;@=&), [' <'@<=1;<' G<AF<'EC1FC'1=' = <F<==A; ' ' ;A F<N' DB ' E<'E B6@' EA?<'EA;' 19' C<' C B;' ;' =A9< ' 9' ;A F<'E<;<' 'D<' C;<A < <@'9 ;' C< '61D<; ' 1 =<69' E B6@'D<' C;<A < <@'A @'E<'=C B6@' AGG<A6'E1C'GA ;1 1F'F 91@< F<' ' C<'F B;A?<' 9' C<' A 1 ' <'A@ G ' C<' G;1 F1G6<' 9' 1 <;I< 1 ' , CA'1=' '=A '' E<' . A1 A1 ' CA'9 ;<1? <;=' . I<' ';1?C ' '1 <;9<;<'D ' 9 ;F<'1 'A' A 1 3='1 <; A6'A99A1;=' <'E166' 'A66' FFA=1 ='=BGG ;' C1=' G;1 F1G6<'D ' . <A ='' 9'' <? 1A 1 ='' A @' 1 ' =BGG ;' 9' C<' 1 <;<= =' ;' @1? 1 ' 9' ;A F<'A6 <'E166'E<' A><'BG'A; . =' '<' E166' 'A66 E' CA' A ' A 1 'CA='A';1?C ' '@;A?'B='1 'A'EA;'9 ;'1 =' =A><'39 ;' C<'D6 @' 9' ;< FC . < ' 6 'D<6 ?=' ' ;A F< `' C1='G 61F '' EC1FC'EA='A6=' CA ' 9' C<' - 1 ?'' EA='9 66 E<@'E1C'91; . <==' A @' 'E1 C B ' =BFF<==' 1 ' ;<=G<F ' ' < ;A6' A6 ' A9 <;'' C<' 9A16B;<' 9' C<' 1 =B;;<F 1 '' EC1FC' EA='=BG0

CG>+<> @A BJ<>$+@C

G;<==<@' D ' C<' G;<=<' F<' 9' C<' B= ;1A ' A; . ' ;< FC' @1G6 . AFK'3' A@@1 ?'1 =' <99 ; =' ' C =<' 9' C<' C<;' G E<;='' D A1 <@'9; .' C<' <E' G G<'' O;<? ; ' : '' A'9 ; . A6'< ?A?< . < ' '1 ; 0 @BF<'1 'C1=' A <=' . A ' <F<==A; ';<9 ; . =' EC1FC'CA@'D<< '6 ?'A;@< 6 ' @<=1;<@'' A @' G<;=BA@<@' C<' B= ;1A ' 0 I<; . < '' 'E1 C@;AE' 1 =' ; G=' 9; .' A61A ' <;;1 ;

;A F<'' 1 '=G1 <' 9' C<' = . D;<'K<A6 B= ' 9' ?6A @'' . A@<'1 =' G E<;' 9<61' 1 '+ ; B?A6'' EC<;<' C<' B=B;G<;' % ' 1?B<6' CA@' 1 961F <@' C<' . =' @1=0 ?;AF<9B6' 166 ;<A . < ' ' ;< FC' =BDK<F =' '=A 1=9AF 1 'CA I1 ?' D<< ' ' ;<9B=<@' ' C<' ;< FC' F =B6'' @ . 1;A6' B==1 '' B @<;' C<' 96<< D;9 ;<`Y0 + ; B?B<=<' FA '' 9 ;F<@' C<' . B C' 9' C< $AJB+', 2,' A?B='' EC1F61' CA@' D<< '' C1 C<; ' ;<?A;@<@' A=' 1 . G;<? AD6<'' @<= ; <@' C<' DA <;1<=' 9' C<' 9 ; ='' A @' D ' C1='D;1661A '9<A ' D A1 <@'9 ;' C<' ;< FC' A; . =' A' F . G6< <' ;<GA;A 1 '9 ;' C<1;' ;<I<;=<=

C<' ?;<A ' JB<= 1 ' G< @1 ?' D< E<< ' 66A @' A @' (<6?1B . ' ><G ' ' G ; 1 ' 9' <= <; ' B; G<' 1 ' F 1 BA6' @1=JB1<' A @' 1 'A; . ='' A @' C<' < . 1 ' F;<A <@' D< E<< ' C<' E ' F B ;1<=' D ' C<' @<F1=1 =' 9' C<' %<F1A1 99C<' % @ ' 9<;< F<' . 1?C ' A ' A ' . . < ' ?1I<' ;1=<' ' E' ';<9A 9I<' ?< <;A6' F 961F ' C<' 9<;< F<' 1 . G =<@' BG ' (<6?1B . ' 9' (;9#Y1 ;A @' ADA @ . < ' ' A @' 9' A' G ; 1 ' 9' 1 . DB;?' B##>+C' =B;;< @<;' 9' BP< . DB;?'' EC1FC' EA='A ' C<;<0 @1 A; ' G ==<==1 ' 9' C<' B=<' 9' A==AB'' A @' EC1FC' 9 ; . <@'' . ;<0 I<;'' A' G ; 1 ' 9' C<' O<; . A 1F' 9<@<;A 1 ' ' A6=' @1I1@<@' C<

A 1 A6‘ @<D ‘ <JBA66 ‘D< E<< ‘ C<‘ E ‘F B ;1<=‘ℕ A @‘ ‘ C<=<‘F @1 1 =‘ EC1FC‘ E<;<‘ 9 ;‘ A‘ 6 ?‘ 1 . <‘ ;<K<F <@‘ 1 ‘ B @<; >‘ ‘G; FB;<‘ C<‘ ;<F ?0 1 1 ‘ 9‘ C<‘ 1 @<G< @< F<‘ 9‘ C<‘ <E‘F B ; ‘D ‘ C<‘ 91I<‘G E<;=‘ (<6‘R ‘ ?1B . ‘ 1<6@<@‘A ‘ 6< ? C‘ A @‘ 99<;<@‘ C<‘F; E ‘ ‘ C<‘ %B><‘ @<‘ < . B;=‘ C<‘ =<F @‘ = ‘ 9‘ C<‘ - 1 ?‘ 9‘ C<‘ ;W FC‘ =‘ B1=‘ +C161GG<‘ C E<I<;‘ <K<F <@‘ C1=‘ 99<;‘ B ‘ 9‘ ;<=G<F ‘9 ;‘< ?A?< . < =‘ EC1FC‘ C<‘ CA@‘G ;<I1 B=6 ‘ < <;<@‘ 1 ‘E C‘ 0 ;<A ‘ (;1 A1 ‘ C<‘ (<6?1A =‘ <6<F <@‘ A=‘ C<1;‘ 1F1 ?‘ < G 6@‘ +;1 F<‘ 9‘ DB;?‘ E1@ E<;‘ 9‘ C<‘ <9<F<@Q 9; 9 +;1 F<==‘ CA;6 <‘ I@1 ‘ CA@‘ D<< ‘ C<1; G;<=B . G 1I<‘ ‘ C<‘ ?61=C‘ C; <‘ℕ A @‘ C<‘ . A;;1A?<‘ 9‘ CA ‘ . A;FC‘ 1 ‘ C<‘F B;=<‘ 9‘ C<‘ 9 66 E1 ?‘ <A;‘ IK C‘ C<‘ <6@<= ‘@AB?C <;‘ 9‘ C<‘ - 1 ?‘ 9‘ C<‘ ;< FC‘@ BD6 ‘ = ;< ? C< <@‘ C<‘ A661A F<‘ D< E<< ‘ ;A F<‘ A @‘ (<6?1B . < G 6@‘ CA@‘ =FA;F<6 ‘ AFF<G <@‘ C<‘ F; E ‘ EC< ‘ - 1 ?‘ g gK‘ 9 1661A . ‘ ;<9B=1 ?‘ ‘ AF> E6<@?<‘ C<‘ A; . 1= 1F<‘ A@IA F<@ E1 C‘ C1=‘ ; G=‘ GB ‘ ‘961?C ‘ C<‘ (<6?1A ‘ A; . ‘ EC1FC‘ EA=‘ fC< ; @1 . ‘FC1<96 ‘F . G =<@‘ 9‘I 6B <<;=‘ A @‘ . A;FC<@‘BG ‘ BIA1 ‘ EC<;<‘C<‘ >‘ BG‘C1=‘G =1 1 ‘ < G 6@‘1 ‘ C1=‘<P ;< . 1 ‘@< . A @<@‘ C< A1@‘ 9‘ ;A F<‘ A @‘ A;=61A6‘ OW;A;@‘1 . . <@1A <6 ‘ < <;<@‘ (<6?1B . ‘ A ‘ C< C<A@‘ 9‘A ‘ A; . ‘ 9‘919 ‘ C B=A @‘ . < ‘ D<9 ;<‘ EC . ‘ C<‘ %B FC‘ A;;A ‘ 9<66 DAF>‘ E1 C B ‘ 91?C 1 ?‘ ‘ ;<=B . <‘ C<‘ G =1 1 ‘ EC1FC‘ 1 ‘ CA@‘ FFBG1<@ D<9 ;<‘ 1 =‘ ;AG1@‘ A @‘ D;1661A ‘ FA . GA1? ‘ EC1FC‘ EA=‘ FA66<@‘ [‘ C<‘ %A =3 A . GA1? ‘ (<6?1B . ‘ EA=‘ CB=‘ A‘ =<F @‘ 1 . <‘ =AI<@‘ D ‘ ;A F<‘ A @‘ C;<<‘ . C=‘ 6A <;‘ a ‘ C<‘ 6 C‘ I< . D<;b‘ A‘ ;<A ‘F =1= 1 ?‘ 9 E< 9 B;‘ A; 1F6<=‘ ;<?B6A 1 ?‘ 1 ‘ A‘ @<91 1 1I<‘ A @‘ 1;;< 580(1)‘ ' 0%%)*‘ /-)‘ .)60*0/25%‘ 5‘ /-)‘/F5‘ N2%435 ' .‘ F0.‘ 7@><KB3<M@ F)%‘, 75&* 7<$?#@>‘, 2, 1? <@‘ D ‘ (<6?1B . ‘ A @‘ C<‘ 9<;< F<‘ ?BA;A <<@‘ ‘ C<‘ - 1 ?‘ 9‘ C<‘ (<6?1A =‘ C<‘ <P<FB 1 ‘ 9‘ 1 =‘ F6AB=<=‘ ‘ C<‘ =A . <‘ 1 . <‘ +;A F<‘ D A1 <@‘ 9; .‘ C<‘ 9 B;‘ C<;‘ ?;<A ‘ G E<;=‘ A ‘ EC =<‘ <PG< =<‘ <I<;A6‘ (<6?1A ‘ 9 ; ;<==<=‘ CA@‘ D<< ‘ F = ;BF <@‘ A @‘ . A1 A1 <@‘ =1 F3‘ 7‘ A=‘ A‘ ;A . GA; ‘ ‘ B;‘ 9; 1<;=‘ CA ‘ C<‘ @<9< F<=‘ 9‘ C =<‘ G6A <=‘ =C B6@‘ D<‘ @< . 61=C<@ Y‘ C<‘ ;<A ‘ 9‘ C<‘ E< 9 B;‘ ; 1F6<=‘ C E0 <I<;‘ EA=‘ ‘AFF<G <@‘ D ‘ C<‘ - 1 ?‘ 9‘ 66A @‘ EC =<‘ ; G=‘ FFBG1<@‘ E<;G‘ A @‘ G<AF<‘ EA=‘ ‘A=‘ < ‘ ;< <= AD61=C<@ C<‘ <?1=6A 1 I<‘ <==1 ‘ CA@‘ D<< ‘ G< ‘ 1 ‘ +A;1=‘ 9; .‘ C<‘ . . < F< . < ‘ 9‘ C = 161 1<=‘ E ‘ CB @;<@‘ <E‘ %<GB ‘ 1<=‘ CA@‘ D<< ‘ <6<F <@‘ℕ A @‘ C<‘ . AK ;1 ‘ A ‘ 91;=‘ 1 ‘ A‘ = A <‘ 9‘ 1 @<F1=1 ‘

EA=ƒ D ' C< 91; .' A @ G;B@< 'F @BF' 9 C< O I<; .< ƒ ;A661<@ ' 1 =
=1@<' C< CA . D<;' GA==<@ƒ A . ?=' C<;' 91 A F1A6 6AE=ƒ < EC1FC
91P<@ C< F1I16 61='9 ;' C< ;<1? ' A ' E<6I< . 1661 =ƒ A ' A . B ' 6<==' DK;'
. ;< CA ' < CA69 CA ' CA ' 9 C< G;<I1 B=' F1I16 61= ' <I<; C<6<==
1 ' EA=' ;<?A;@<@ A=' < ; . B=ƒ A @ EA=' C< DK<F ' 1 ' = . < F<6<D;A <@
GA . GC6< =Y 9 C< . =' B ;A?< B=' A66<?A 1 =' (B ' C< FC1<9 DB=1 <==
9 C< =<==1 ' EA=' C< ;<I1=1 ' 9 C< A; 1F6< 9 C< FCA; <;'
c 1 Y 9 C<YY ;<6A 1 ?' ' C< G<<;A?<' A=1 . 1;' +W;1<;' G<;F<1I<@ C< 1;;<
G O;## =1= 1D6< G E<;' 9 CA ' GBD61F G1 1 ' EC1FC CA@ @<F6A;<@
A?A1 = ' C<;<@1 A; ' ;A >ƒ A @ ' C1=' G 1 ' C< @1@ I1 6< F< ' C1=' G<;= A6
F I1F 1 =' C< G<<;A?< EA=' FCA ?<@ 9; .' A ' C<;<@1 A; ' < 1 ' <
9 ;' 619<N A @ A6 C B?C C< ; E ' G;<=<;I<@ C< ;1?C ' 9 . 1 A 1 ?' 1 =
. < . D<13=ƒ 1 ' F B6@ 6 ' =<6<F ' C< . ' 9; .' F<; A1 ' F6A==<= #

C< CA . D<;' CA@ =A ' 9 ;' = . < E<<>=' 6 ' EC< ' A' ?;<A ' FA A= ; GC<
AE >< C; B?C B ' ;A F< = . GA C1<=' A=' D6< A=' C< ' E<;< GA1 9B6ƒ A @
>## 9 >7@>S' ?< <; B=' C<A; =' E1 C = ;; E ' A;=AE' CA@ 9A66<
D<9 ;< C< B==1A ' ; G=' F . . A @<@ D ' +A=>1<E1 FC '
CAGG ' + 6A @ƒ A9 <;' C<; 1F <PG6 1 =' A @ G; @1?1 B=' DB ' 9;B1 6<==' <99 ; =ƒ
CA@ F< A?A1 ' D<< ' I<;F . <' C< CA@ ;< @<;<@ ;<F F161A 1 ' E1 C
C<;' IA JB1=C<;=' 1 . G ==1D6< D ' 1 . G;B@< 6 'G; F6A1 . 1 ?' C< @< C; < . < '
9 C< . A 99=ƒ A @ E' C< I< ?<A F< 9 C< MA;' EA=' AD B ' ' 9A66
BG ' C<;' ' ?< <;A6 F; ' 1 ' 9AI B;' 9 A==1= 1 ?' C<;' A; =< 1 ' +A;1=ƒ A @
C< GBD61F E1=C D<FA . < . A 19<= <@ 1 ' 1= ' @< . = ;A 1 =' EC1FC =
D<FA . < =<@1 1 B=ƒ A @ EC1FC CA@ ' D< =BGG;<==<@ D ' 9 ;F<' (B ' A ' =1P
CB @;<@ 6<A?B<=3 @1= A F< ;A F< F B6@ 6 ' 99<;' C< ? @ 991F<=' 9 C<9
@1G6 . AF ' A @ A ' A= 6B . ' A @ A==1= A F< ' C< IA JB1=C<@ 9B?1 1I<=' C<
D6 ' AFJB1 <@ C<;=<69 9 C1=' @ BD6< @B 'N C< <P16<=' ;<F<1I<@ 1 ' ;A F<
A ' < CB=1A= 1F E<6F . <ƒ A @ C< O I<; . < ƒ E1 C C< A1@ 9 C<
CA . D<;ƒ G; I1@<@ 9 ;' C<1;' <F<==1 1<=

C]' ?;<A ' <PF1 < . < 'G; @BF<@ D ' C< A99A1;=' 9 + 6A @ EA=' FA6 . <@
AB ' $+' KB+A EC< ' A' 9 ; . 1@AD6< 1 =B;;<F 1 ' DB;= ' 9 ; C 1 ' =ƒ C<
FAB=< 9 EC1FC EA=' ' A ' G 61 1FA6 . 1I<ƒ DB ' .1=<; '
;A@<' 1 ' A; 1F6<=' 9 6BPB; ' ?< <;A66 ƒ A @ <=G<F1A66 ' 1 ' C< A; 1F6< 9 = >ƒ
CA@ =B99<;<@ . BFC 9; .' C< =C F>' F . . B 1FA <@ ' A66 B; G< D ' C<

I' P @<<@7A' B+' <M@ G# $A< ((JK') ' C@ B7 ; @+$+ '
<' +' B7C@7 <B' BJ<>$+' <M@ ?B+A@+< B3 <M@ @@7A' <B' <M$A' $; LB7<>+< LB$+<' <M@ ! BG@7 ƒ
R+@+< S>A' ?B ; L@##@C <B' ?7@><@ <M$7<K0A$N' +@S' B+@A

<I 6B 1 9 8"(A @ 1 C< F1 9 =6 A6 < <1?C C B=A @ G<;A 1I<= < . G6 <@ 1 =16> . A B9AF B;< E<;< B 9 E ;> A @ 1 _ A 9 C< . <A = 9=BD=1= < F< C< A; =< C< = B @ 9 6 . @1= ;<==1 ? A @ <;;1D6< F; ([48 ;> ; D;<A@ Z $+AD77@?<$B+ @; I< AEA C< AB C ;1 1<= A @ C< ?A;;1= (A @ 9 ; = . < 1 . <(@B;1 ? EC1FC C< AD= A1 <@ 91 .31 KB;1 ? <1 C<; G<;= = ; G; G<; (;< . A1 <@ . A= <;= 9 CA ?;<A F1 A; . 9 E< C B=A @ . < (B11@<; C< ;@<;= 9 A;=CA6 B6 A @ C< %B>< 9 ;6<A =(C< C<1; G;<=B . G 1I< C< C; <(. A;FC<@ BG =(;< >1 (A @ ;< <= AD61=C<@ ;@<; C<;< N DB 1 . G ; A ;<61<9 EA= A99 ;@<@ C< @1= ;<== 9 A 1 . . < =< G GB0 6A 1 N A @ EC< E< ;<A@ C< 6A ?BA?< <1 C<; 9 C< 0 I<; 1< ;?A = ; 9 C< CA . D<;= E1 C ;<9<;< F< C1= 9;A ;1F1@A6 = ;B??6<(E< FA DB ;<?;< 91 @ 1 1 <PG;<==1 9 A E1=C ;<61<I<(D C< A1@ 9 C< 6AE(C< . 1=<; EC1FC CA@ D<< 1 = FAB=<

C< I1F ; CB= ?A1 <@ D C< A; . = ;< ? C< <@ C< 1 1= ; (A @ 1 +A;1= C< / CAI1 ? D<< =BGG;<==<@ E<;< =BFF<<@<@ D F 0 =G1;AF1<= =G1;AF1<= E<;< 9 ; . <@ 9 ; C< ;<= ;A 1 9 C< <GBD61F(9 C< . G1;<(A @ 9 C< <6@<= D;A FC 9 C< (B;D = N DB C< < <;? 9 C< 0 I<; . < < AD6<@ 1 ;1B . GC I<; A66 C<=< G6 =(A @ 1 = A < 1 EA= =G<<@16 FA66<@ 9 ;<1? A99A1; = 1 ;<=G<F A6

C< G; . 1=<= <PAF <@ 9; . C< + 191FA6 0 I<; . < D C< 1 <; I< _ 1 9 C< ?;<A G E<; = CA@ D<< ><G (A @ ;<9 ; . CA@ D<< . A@< 1 A A@ . 1 1= ;A 1 EC1FC EA= A;D1 ;A; (GG;<==1I<(A @ AD= 6B < C< 1;;1 A <@ G< G6< A?A1 ; ;= 1 C< + 191FA6 A <=(A @ C< GAGA6 A; . (;<F;B1 <@ D . <;F< A;1<= 9; . < I<; F B ; (A @ =<I<; A6 1 . <= I1F ;1 B=(F . . 1 <@ A & <=< A A @ C ;61 M@ +A0 <7$>+A$+ B0 #B +> C ;;1D6< <PF<==<= (6 ? A A; =< . 1 = B; (A @ C< B= ;1A =(CAI1 ? D<< FA66<@ C1= A1@ D ;<? ; : (> G ==<==1 9 1 C< ;< FC 0 I<; . < (1 @1? A A 91 @1 ? 1 = 1 <; I< 1 @<=G1=<@ A @ C< . = 9 ; . A6< ?A?< . < = 1? ;<@(;<= 6I<@ < 9 ;F< D ; . = 1 < ;A6 A6 C< G;1 F1G6< 9 1 <; I< 1 A IA6 @1I1=1 A;; 1 ? ; G=(B @<; C< F . . A @ 9 6 <6 . D<=(EA= ;@<;<@ G; F<<@ A @ A>< G ==<==1 9 F A C1= ;@<; EA= ;AG1@6 <P<FB <@(A @ C< @ <D;BA; C< F1 9 ' F A(E1 C 1 = F1 A@<6(E<;< 1 C< CA @= 9 C< ;< FC (C1= D 6@ A @ I1 6< AF 9 A??;<==1 A=1 . 1; +W;1<; 6<9 C< GA C 9 66 E<@ D C1= G;<@<F<== ;=(A @ CB= G; I >< @ 6 C< A ?<; 9 C<

* 0 ' !/' 8 ' -e ' : !>' '8* -'

1;' 9' .<' DB' C<' 6 B@' ;<. = ;A F<=' 9' C<' C<;' B; G<A' G E<;='
<' E1=C<@' '=C E' CA'< ?A?<. < =' < <;<@' 1 'E1 C' ;A F<' F 16@' ';<. A1 'A' @<A@' 6< <;' A @' CA' C<' @1@' '1 < @' 'ADA @ ' A6 ' ' C<' A66 G E<;9B6' G; <F ;A <' 9' B= ;1A' @<;' C1=' E 9 6@' A=G<F' C<' FFBGA 1 ' 9' F A' EA=' G GB6A;'1 ' ;A F<'N C<' CA. D<;=' AGG; I<@' C<' AF' 9' C<' 1 1= <;' A @' C<' D1 <;' F . G6A1 =' . A@<' A?A1 ='' C<' O I<; . < 'AD; A@'= ;< ? C< <@'1 'A'C . <

A' < @W<' IC<;<' A@A . <' C<' %BFC<==' @<' (<;; 'A B F<@' CA'=C<' E B6@'= 'A;;1I<' EA=' A' C1=' 1 . <' C<' =F< <' 9'=A ?B1 A; @1= B;DA F<=' A @' = . <' C<; 1F' I1F 1 . =' 6<66' 1 ' $C<' 91;= F 961F =' EC1FC' E<;<' C<' G;<FB;= ;=' 9' A' F1I16' EA;' C<' <?1 1 . 1= =' E<;<' 61B=' A?1 A 1 ?' 1 ' C<' = B C' 9 ;' C<' GB;G =<' 9' ;A1=1 ?' C<' %B><' @<' (;@<ABP' ' C<' C; <' A @' A 'A < . G ' A '1 =B;;<F ' ' 1 ' CA@' D<< ' =BGG;<==<@' A ' A;=<166<=' a G;16' 8 b' EC< ' A' 9;<=C'

D<J7@>Q' B3'BMBO' BG ' ;A F<' 9 <;' CAI1 ?' @<= 6A <@' . A

)$;$c H7$@7&' F B ;1<=' 1 ' B; G<' C<' FC 6<;A' AGG<A;<@' 1 ' +A;1=' EC<;<'

)>K',2' . A@<' ?;<A' ;AIA?<=' FA;;1<@' 99' A=1 . 1;' +W;1<;' A @ ' A66' C<' G;1IA <' FAB=<=' 9 ;' . B; 1 ?' C<;<' EA=' CB=' A@@<@' A' ?;<A' GBD61F' <'

+W;1<;' CA@' AGG<A;<@' A 'C1=' ;1?C 'C B;'N C<' @1=G6A <@' ?;<A' A @' ;A;<' JBA61 1<=' 1 ' C<' AFF . G61=C . < ' 9' C1=' A=>' A @' C<' EA=' BJ>7>?<@7 ; CI' A1@<@' 1 ' 1 ' <I< ' D ' C1=' I<; ' @<9<F =' D ' C<' ;B@<' A @' 1 . G< B B=' I<C< . < F<' 9' A ' D= 1 A <' E166' A @' A 'A;@< ' 'A @' 1 96<P1D6<' FCA;AF <; ' <' @1@' ' C E<I<;' F . G6< <' C1=' E ;>'N 9 ;' C B?C' C<' =BFF<==9B66 ' F . DA <@' # ' A @' =<@1 1 B=' C<' IA JB1=C<@' E1 C B' <P 1;GA 1 ?' C<' <I16' A @' A9 <;'C1=' @<GA; B;<' C<'=G1;1' 9'1 =B;;<F0 1 ' ;<AGG<A;<@' . < AF1 ?' A @' 9 ; . 1@AD6<' (B' C<' CA@' ;<G6AF<@' C<' O I<; . < 'A' C<' C<A@' 9'=G<1< ' A @' CA@' =C E ' CA ' 1 'CA @=' A' F<' 91; .' A @' KB=' C<' G E<;' 9' C<' 6AE' 1=' =BG<;1 ;' ' A ' C<' <99 ; =' 9' F =G1;A ;=' A @' 1 =B;;<F 1 1= =' C1=' ?;<A' A=>' EA=' C<' <' C<' CA@' ' G<;9 ; . ' A @' C<' @<I <@' C1 . =<69' '1 =' AFF . G61=C . < ' <I< ' ' C<' 1 . < 9' C1=' @<A C' ' C<;' ;<=G<F =' C<' EA=' ' G<;CAG=' =B991F1< 6 ' = 1 ?' 9 ;' C<' =1 BA 1 ' A=1 . 1;' +W;1<;' EA=' <' 9' C =<' EC ' CA@' =<< '1 ' C<' ;<I 6B 1 ' 9' SB6 ' 6 'A' @1=A= ; B=' A6 C B?C' <F<==A; ' <I< ' C<' = 6<' DK<F ' 9' EC1FC' EA=' A' FCA ?<' 9'? I<; . < 'A @' ' <P < =1I<' ;<9 ; . =' 1 ' C<' 1 = 1 B 1 =' 9' C<' F B ; ' <' <PG;<==<@' '@<=1;<' 'Sb6AF<' C<=<' 1 ' F6 =<;' ;<6A 1 'E1 C' C<' 1@<A=' A @' <F<==1 1<=' G; @BF<@' D '=' <E' A' G =0

B;< 9 A99A1;=(A @(E1 C C< <PF<G 1 ' 9 C< . @191FA 1 =1 ; @BF<@ 1 ' C< F . G =1 1 ' 9 C< G<<;A?<(C< . A@< ' G;<GA;A 1 ' <I< ' 9 ;' C< FA;; 1 ?' B ' 9 C< ;<= 6B 1 =1 GA==<@ A9 <;' C< AFF<G A F< 9 C< FCA; <;' C< 6A <;' E<;< <JBA66 ' 9 ;? < ' ;' <?6<F <@ D ' C< CA . D<;=(A @ C< 6<?1=6A 1I< =<==1 (EC1FC F6 =<@ A 9<E @A =1 D<9 ;< C< @<A C 9 A=1 . 1;' +W;1<;' a G;16(8 b(6<9 ' ;A F< 1 ' A G;<FA;1 B=1 A @ @1= B;D<@ = A <(A G;< ' ' C< =A . < @1I1=1 =(' C< =A . < A?1 A 1 =(DB ' A ' 6<A= ' 1 =G1;<@ E1 C C< =A6B A; ' F I1F 1 ' CA ' A ?< <;A6 EA;' . 1?C ' D< AI 1@<@(A @ CA ' CW @< . ' 9 F1I16 G>7' ;<I 6 (A @ A A;FC ' EA=1 ' 1 I1 F1D6<

+

) 0 000 K O J =" 8 $.
5 / ! !8 ! ! 8 ! !/
, 2/
! , 2 , 8 ! , 2/

*+ @<A C 9 A=1 . 1;+W;1<; A6 <;<@ DB I<; =61?C 6 C< F . G =1 1 9 C< AD1 < 1 EC1FC @< A61I< EC ?AI< BG C< G ; 9 61 9 +BD61F = ;BF 1 O1;A;@ D<FA . < 1 1= <; 9 C< <;1 ; (B C< ?;<A 1 1= <; EC . ; A F< CA@ 6 = EA= < 9 C =< EC A;< =BF0 F<<@<@ DB FA D< ;<G6AF<@ C< =1 BA 1 9 C< F B ; EA= =<;1 B= A @ 1 = G<;16= A= E<66 A= C< 9AB6 = EC1FC CA@ D<< F . .1 <@ E<;< G 1 <@ B E1 C . BFC D1 <; <== 1 A @ FB . < F<6<D;A <@ B @<; C< A . < 9 C< + ! EC1FC EA= =1? <@ D C< %<GB 1<= 9 C< GG =1 1 C< 6A <; A6 . = < 1;<6 F . G =<@ 9 . < 9 . I< . < EA= @1I1@<@ 1 E @1= 1 F G ; 1 = , C< <P ;< . < <9 A @ C< <9

L7BL@7#K = ?>##@C C< 3$7A< = . < 9 C< ; @ ; J@7A 9
M@}N<7@ ; @ @3< M$?M @7@ L@+#K $+ 3>GBD7 B3 >; 7@LDJM?>+ #B7 ; ;
>+C <M@ CK+>A<$? :19Y

? I<; . < CA@ A= 1 = 6<A@<;= 1 C< 6<F 1I< CA . D<; A . ?= C<;=% BG @< 63 B;< <;3 ;?< = ; . < 1 0A . 1<; +A?]= M A @ A= 1 = G;1 F1GA6 ;?A = 1 CW G;<== ; . A @ A;;<6 @1;<F ; 9 C< ! A11@ ; . A @ A;;A= A @ 0 @<9; 1 AIA1? AF <@1 ;= 9 C< @ C< =<F @ G ; 1 9 C< GG =1 1 CA@ 9;A >6 AFF<G <@ C< A;FC1FA6 0 I<; . < ?< C<; E1 C C< B ?<= D;A FC 9 C< (B;D = A @ FA66<@ C< . =<6I<= 9 ; A 1 . < [C< % A= 1F <9 Q @166 (A;; EA= 1 = G;1 F1GA6 ;A ; A @ ;<F ? 1=<@ 6<A@<; = 9 1 = . < . D<;= G<;9<F 6 B @<;= A @1 ? C< G =1 1 ;<F ? 1=<@ C =< 1 . G ; A GCA=<= 9 1 EC1FC E<;< . BFC <?6<F <@ D C< =<; IA0 1I= A @ ?< <; B= =< 1 . < = E<;< A661<@ 1 C< . E1 C A =1 F<;<@<I 1 C< 1 =G1;<@ C E<I<; DB 61 6< F 91@< F< A . ?= C< GA; 1=A = 9 ;@<; N 9 ; C< E<;< F6 =<6 F <F <@ D C<1; A <F<@< = A @ C<1;

. A==AF;<@' ℕ C<' F 961F ' ;A?<@' A ' =<I<;A6' G 1 =(' A @' A' G ; 1 ' 9' C<' F1 ' 9<66' 1 ' C<' CA @=' 9' C<' 1 =B;?< =' C<' - 1 ?' JB1 <@' A1 ' 6 B@' A ' 1?C 9A66' ' CA= < ' ' C<' =F< <' 9' @A ?<;' <' ;<I1<E<@(' A . 1@=' C<' # F;A=C' 9' . B=><; 'A @' D ' C<' 61?C ' 9' ;FC<=(' C<' ; G=' A @' C<' A 1 A6' 0BA;@' C<' 6A <;(' ;A66 1 ?' A ' C<' =1?C ' 9' C<' ;<@' 96A?(' B @<;' C<1;' C<; 1F#F . . A @<;' 0< <;A6' DAB(' 9 B?C ' IA61A 6 (' A @' =G16 ' C<1;' D6 @' A=' 9;<<6 'A=' C<' ;<?B6A;' ; G=' 1 ' =BGG ; ' 9' C<' FAB=<' 9' ;@<;' C<' = ;B??6<' 6A= <@' E ' @A =(' A @' ' C<' <I< 1 ?' 9' C<' * C' SB <' C<' 1 =B;0 ?< =(' =CB ' 1 ' 1 ' C<' JBA; <;' 9' C<' 6 f ;<' A1 W; (' A @' < F6 =<@' D<C1 @' = . <' 6 GC 6<@' DA;;1FA@<=(' @<9< @<@' C< . =<6I<=' E1 C' G# @1e1 B=' F B;A?<' A @' E1 C' A66' C<' 9B; ' 9' @<=GA1;

1I16' EA;' CA@' A ' C<' =A . <' 1 . <' DB;=' 9 ; C' 1 ' C<' E<= (' EC1 C<;' C<' %BFC<=' @<' (<;; ' CA@' G; F<<@<@' 1 ' =G1 <' 9' C<' A@I1F<' 9' C<' . =' 166B= ;1 B=' GA; 1=A =' 9' C<' FAB=<' 9' < ; ' ' C<' FA= 6<' 9' +W 1==1];<' 9<66' A' G;< ' ' C<' 96A . <=(' A @' 1 =' @<9< @<;=' @1<@' D< <A C' 1 =' < . D<;=' ' C<' I<; ' @A ' ' EC1FC' C<' ;<GBD61FA =' 1<6@<@(' 1 ' C<' FAG1 A6(' D<C1 @' C<' DA;;1FA@<=' 9' A1 W;

G# S>7' $+' <M@' S@A<

C<' 0 I<; . < (' A9 <;' 1 =' I1F ; (' 1 @B6?<@' 1 ' = . <' I1 6< ' A @' . BFC D< ;<?;< <@' AF =' ' ; A6' @<F;<<' G6AF<@' +A;1=' 1 ' A' = A <' 9' =1<?<(' A @' >' C<' G;1= <;=' 9; .' C<1;' A B;A6'KB@?<=' ' =BDK<F ' C< .' ' C<' @<F1=1 =' 9' . 161 A; ' ;1DB A6=' ' =<F @' @<F;<<' EA=' F BFC<@' 1 ' C<' =G1;1 ' 9' A C<;' A?<(' A @' ;@<;<@' C<' =B;?< =' A @' GC =1F1A =' ' @< B F<' C<' E B @<@' EC .' C< ' CA@' A < @<@' C<' B;' 9' A==A0 1 ' @<F6A;<@' CA (' B @<;' C<' F1;FB . = A F<=' 1 ' EC1FC' 1 ' EA=' 1==B<@(' C<' @<F;<<' EC1FC' G6AF<@' +A;1=' 1 ' A' = A <' 9' =1<?<' EA=' 166<?A6(' A @' C1=' 91;=' @<F;<<' EA=' 1 . . <@1A <6 ';<I ><@(' EC16=' C<' =<F @' EA=' =BGG;<==<@' D ' C<' B A 1 . B=' F @< . A 1 ' 9' GBD61F' G1 1

' A66' C<=<' FAB=<=' 9' A?1 A 1 ' A @' A6A; .' E<;<' A@@<@' ?;<A ' A P1< ' E1 C' ;<=G<F ' ' C<' GG =1 1 ' . A@<' D ' C<' - 1 ?' 9' C<' < C<;6A @=' ' C<' ;<A ' 9' C<' E< 9 B;' ; 1F6<=(' EC1FC' =< 6<@' C<' =<GA;A 1 ' D< E<< ' 66A @' A @' (<6?1B . ' ' EA=' G; G =<@' ' @<G;1I<' C<' %B FC' 9' C<' F1 A@<6' 9' E<;G' A @' = . <' 9 ; ;<==<=' EC1FC' E<;<' = 166' FFBG1<@' D ' C<1;' ; G=(' A @' C;<<' 9' C<' G E<;=' ;<G;<=< <@' A ' C<' 9<;< F<' ' @ , B==1A(' +;B==1A(' A @' B= ;1A , ;<9B=<@' ' A><' F <;F1I<' . <A=B;<=

L@7A@?D<$B+ ' @' C$@C' <SB' K@>7A' #><@7' ><' M$A' ?Mm<@>D ' >' ! 7>+ @ ' #@>G$+ ' >' 7@><' >+C' 7@AL@?<@C' +> ; @ ' >+C' >' 7B$+>7Q>J#B' @N> ; L#@' B3' <M@' LBS@7' @N@7?$A@C' BG@7' <M@' LDJ#$?' ; $+C' JK' >+' MB+@A<' M@>$' A$+?@7@#K' C@GB<@C' <B' <M@' LBLD#>7' ?>DA@

A?A1 =' - 1 ?' 1661A . ' 9 ;' C1=' GB;G =<' ;A F<' A @' ?6A @&' C E<I<;&' A?;<<@' ' I<;F . <' C1=' ;<=1= A F<' D ' 9 ;F<&' A1#@ C<' =1<?<' 9' E<;G' EA=' ;<= 6I<@'

' C<' G;<=< F<' 9' = ' . A ' G<;16=' C<' . <E' . A;FC ' CA@' . ;<' CA ' <I<;' <<@' 9' C<' = ;< ? C' @<;1I<@' 9; . 'B 1 &' A @' 1 '= B?C ' . ;<' <=G<F1A66 ' C<' =BGG ;' 9' A66' 'EC .' GBD61F' G1 1 'A @' C< . =<6I<=' ?AI<' C<' A . <' 9' =<; IA 1I<=' C<' F . . ' @A ?<;' I<;FA . <&' 1 ' C<' FA=<' 9' C<' G;1 F1GA6' 6<A@<;=&' C<' ;1IA6;1<=' 9'A . D1 1 'A @' G<;= A6' < . 1 1<=N' 1 ' I<;0 ;B6<@' @199<;< F<=' 9' G1 1 'A=' E<66' A=' 1 F . GA 1D161 1<=' 9' < . G<;&' A @' C<;<' EA=' 9 ; . <@' C<' 1 1= ; ' 9' F D<;&' 8

' C1=' 1 1= ; &' C<' . 1 A6' C<A@' 9' EC1FC' EA=' A;=CA6' B6 &' C<' . =' < . 1 < ' 9' C<' @ F ;1 A1;<=&' ' @<' (; ?61<' A @'

0B1M &' E<;<' B 1 <@' E1 C' = . <' I<; '1 . G ; A ' . < . D<;=' 9' ?<BJ@7 ' $A2 ' C<' <9 ' < ;<&' ' C1<;=&' (A; C<&' A @' B . A ' C<' <E' 1 1= ; ' GB;=B<@' C<' =A . <' G 61F ' A=' A=1 . 1;' +#;1<;&' A @' C<' GA; 1FB6A;' FCA;AF <;0 1= 1F' 9' C<1;' A@ . 1 1= ;A 1 ' EA=' C<' ;<=1= A F<' . A@<' ' C<' <?1 1 . 1= ' GA; 'A @' C<' ;<I 6B 1 A; ' @< . A? ?B<=' D ' C<' IA;1 B=' 9;AF 1 B=' 9' C<' =<; IA 1I<' GA; ' C<' ?< <;A6' =G1;1 ' A @' G 61 1FA6' < @< F ' 9' C1=' AD1 < &' EC1FC' EA=' =<I<;A6' 1 . <=' D; >< ' BG' A @' ;<9 ; . <@&' F 1 B<@' C 6@' G E<;' E1 C' 61 6<' 1 <; ;BG 1 ' A @' A6 <;A 1 ' = ' 6 ?' A=' C<;<' EA=' ';BG B;<' ;'1 . G ; A '@1=A?;<< . < 'D< E<< ' C<'1 . G ; A ' 1< 'D ' C<' F FB;;< F<' 9' EC .' 1 ' CA@' D<< ' 9 ; . <@N A @' C1=' G<;1 @' 6A= <@' AD B '9 B;' <A;=' A @' A' CA69'9; .' C<' @<A C' 9' A=1 . 1;' +@;1<;

C<' ?< <;A6' G =1 1 ' 9' A99A1;=' EA=' A=' @1991FB6 'A=' EA;@=' C<' F6 =<' 9' 8 ' ' C<' E<=' C<;<' EA=' F1I16' EA;&' A @' 1 ' +A;1=' A=' E<66' A=' 1 ' . A ' 9' C<' ?;<A ' F1 1<=' 9' C<' >1 ?@ .' C<;<' E<;<' ;<GBD61FA ' F =G1;AF1<=' A @' A' 9B;1 B=' G;<IA6< F<' 9' @< . A? ?1F' GA==1 =' ' EA=' C<' G<;1 @' 1 ' EC1FC' A1 1 . 1= . ' 6 B@6 ' G; F6A1 . <@&' <I< ' 1 ' C<' =A F BA;1<=' 9'KB= 1F<&' 1 =' @ F ;1 <=&' =BDI<;=1I<' A61><' 9' ;<61?1 &' . ;A61 &') B7>#' B+>7?#$R A @' 9A . 16 ' 1<=NY' EC< ' CA;6<=' 1B 1<;&' F =F1< 1 B=6 ' ;<K<F 1 ?' 61<' ;<= ;A1 =' 9' . ;A6' 6AE&' . A@<' G6<A=B;<' 61<' DA=1=' A @' 91 <=' DK<F ' 9' ;=C1G' 9' C<' EC 6<' 9'= F1< '1 'A' = = < . ' EC1FC' EA=' A . <@' A9 <;' C1 . ' A @' EA=' FA66<@' B;1<;1= . N EC< ' A . < A1=&' @<= ; 1 ?' CA ' EC1FC' C<' CA@' A@ ;<@&' =< '9 ; C' E1 C' 91<; ' <6 JB< F<' C<' <E' @ ? . A' 9' C<' 1 9A6610 D161 ' 9' C<' = I<;<1? 'G< G6<N A @' EC< &' 91 A66 &' C<' G; ?;A . . <=' 9' C<

I' M@' #@>C@7A' B3' <M@' A@?<' S@7@' A@+<@+?@C' <B' 3$+@' >+C' $; L7$AB+ ; @+<' $+' D DA<' , 2 ' JK' <M@' BD7<' B3' AA$V@' $+' >7$A] >+C' AMB7<#K' >3<@7S>7CA' <M@' A@?<' J7BQ@' DL

<;; ;1= =' A @' F . .1B11= =' E<;<' =<' 9 ; C' 1 ' C<' ;@<;' 9' C<' @A ' 1 ' 1 B . <;AD6<' =<F;<' = F1< 1<=' ' C<' G;<=< F<' 9' C1=' ?< <;A6' B 6 =1 ?' 9' 9 61=C' ;' F;1 . 1 A6' @ F ;1 <=' ;' =BDI<;=1I<' GA==1 =(' C<' O I<; . < ' 9B69166<@' 1 =' @B ' D ' A>1 ?' < <;?< 1F' . <A=B;<=' 9 ;' C<' GB;G =<' 9' @<9<A 1 ?' C<' G6 =' 9 ; . <@' D ' @< . A? ?B<=' A @' A A;FC1= =' A @' GAF19 1 ?' (;1 A (' EC<;<' C<' %BFC<==' @<' (<;; ' ><G ' BG' A' = A <' 9' F1I16' EA;(' A @' EC<;<' =1P' @<GA; . < =' E<;<' G6AF<@' 1 ' A' = A <' 9' =1<?<

C<' G;1 F<==(' = ' D< ;A <@' A @' ?1I< ' BG' D ' A' E;< FC' A . <@' %<B M(' EA=' A>< ' G;1= <;' A ' A <=' A @' =CB ' BG' 1 ' C<' F1 A@<6' ' % F#< @<'3 (6A <(' EC< F<' =C<' 1==B<@' A9 <;' CAI1 ?' ?1I< ' D1; >' @77K'><' A+<@F' @7?>L<G<K'><' A' FC16@(' C<' 9;B1 ' 9' A' =<F @' . A;;1A?<' E1 C' C<' 1 . ' (6A <Y (' BFC<=1' +A661 ' C<' F1I16' EA;' EC1FC' C<;' G;<=< F<' CA@' A; B=<@' 1 ' C<' D = .' 9' C<' E<=' @1<@' B ' @B;1 ?' C<' 91;=' @A =' 9' C<;' FAG 1I1

C<' 9 ;<1? ' G 61F ' 9' ;A F<(' A6 C B?C' AFFB=<@' 9' E<A> <==' D ' = . <' B7@$ +' LB#$?K <I<; C<6<==' EA 1 ?' <1 C<;' 1 ' 9 ;F<' ;' @1? 1 8 8Y' ;GK?' O I<; . < ' <I<; EC<;<' =C E<@' 1 =<69(' 1 ' A' KB=' A @' . @<;A <' . A <;(' 9AI B;AD6<' ' C<' F = 1 B 1 A6' FAB=<(' EC16=' 1 'AI 1@<@' GB 1 ?' C<' G<AF<' 9' B; G<' 1 ' G<;16&(' A @' E1 C' C1=' DK<F ' = ;< ? C< <@' 1 =' A661A F<' E1 C' ?6A @' ' CA@(' A=' E<' CAI<' =<< (' B @<;0 @# $D ; A>< (' 1 'F F<; 'E1 C' CA 'G E<;(' ' < 9 ;F<' C<' <P<FB 1 ' 9' C<' F6AB=<=' 9' C<' E< 9 B;' ; 1F6<=' ;<6A 1 ?' ' C<' =<GA;A 1 ' 9' (<60 ?1B . ' A @' 66A @' =<JB< 6 (' A' ;< FC' A; . ' 9' =<I< ' C B=A @' . < (' CAI1 ?' A ' 1 =' C<A@' A;=CA6' 0<;A;@(' A @' B @<;' C1 . ' C<' -1 ?3=' E ' <6@<= ' = =(' C<' %B><=' 9' ;6<A =' A @'Q <. B;=(' F; ==<@' C<' (<6?1A ' 9; 1<;' ' C<' 7 C' I<. D<;(' 8 'N A9 <;' EC1FC' 1 ' 1 I<= <@' A @' D<=1<?<@' C<' F1 A@<6' 9' E<;G(' EC1FC' EA=' . = ' D;AI<6 ' @<9< @<@' D ' C<' %B FC' ?< <;A6' CA==W' C1=' 1 . G ; A ' 9 ; ;<==(' C<' >< ' 9' C<' FC<6@ (' EA=' F . G<66<@' ' FAG1 B6A <' EA;@=' C<' F6 =<' 9' %<F<. D<;(' A @' ?1I< ' I<;' D ' +;A F<' ' C<' (<6?1A ' 0 I<; . <

C<' F @BF ' 9' C<' FAD1 <' EA=' ' 6<==' 91; .' A @' 61D<;A6' 1 ' ;<=G<F ' ' LA$+ C<' A99A1;=' 9' GA1 (' EC<;<' <;@1 A @' (' AD 61=C1 ?' C<' A61F' 6AE' 1 ; @BF<@' D ' +C161G' (' CA@' ;<<= AD61=C<@' C<' 6@' ;A@1 1 A6' B=A?<' 1 ' 9AI B;' 9' C<' =BFF<==1 ' 9' E . < ' C' C<' @<A C' 9' <;@1 A @(' C1=' E1@ E(' C<' L B<< . C<;' <?< (' A;1A C;1= 1 A(' ;<61<@' BG ' C<' 61D<;A6' GA; '9 ;' C<' @<9< F<' 9' C<' ;1?C =' 9' C<' 9A A' =AD<66A(' C< ' E ' <A;=' 6@(' A?A1 = ' % ' A;6 =(' C<;' B F6<' A @' ;1IA6' ' C<' C; <(

EC =< ;1B . GC E B6@ CA I< D<< ' A6= ' CA ' 9 C< ;< ; ?;A@< AD= 6B < A @ . A;FC1FA6 GA; ' C< = 61F1 <@ C< =BGG ; ' 9 - 1 ? B1= +C161GG< EC ' BG ' C1= FFA=1 ' =AF;191F<@ C< G;1 I A < 1 <;<= = 9 C1= @ A= ' ' C< F = 1 B 1 A6 FAB=< D ';<F ? 1=1 ? C B ? LB<< ' 1 ' G;<KB@1F< ' C< <I< BA6 ;1?C = 9 C1= E ' C B=< ' < G; . 1=<@ C1= A==1= A F< ' C< LB<< ;<?< A @ D ' C1= ;@<;= A ' A; . ' 9 D=<; IA 1 ' A==< . D6<@ A ' C< 9 ' 9 C< + ;< <<= ;<A@ ' ' F; == C< 9; 1<;' 1 ' FA=< A ' A; . <@ @< . 0 = ;A 1 ' =C B6@ D< . A@< 1 ' 9A I B;' 9 % ' A;6 = <1 C<;' D ' C< ;< FC <?1 1 . 1= ' GA; ' ;' D ' < 9 C< ?;<A ' G E<;=

C< 0 I<; . < ' AF <@ 1 ' C< =A . < =G1;1 ' 1 ' 1 = ;<6A 1 = I 91 C + ; B?A6 EC<;< % ' 1?B<6 EC ' CA@ D<< ' A6;<A@ ' FCA= 1=<@ D ;A F< CA@ =<1M<@ C< C; < 1 ' @<91A F< 9 C< 6<?1 1 . A < +A; ?A6 ;1?C = 9C1= 1<F< C< . . ? LB<< ' % A ' A;1A @AB?C <;' 9 C< . G<; ;' 9 (;AM16 % ' +<@; <6@<= ' D; C<;' 9 % ' 1?B<6 ' % ' +<@; ' AD@1FA <@ C< C; < 9 (;AM16 9 ;' C< GB;G =< 9 G; F<<@1 ? ' @<9< @ C< ;1?C = 1 C1= @AB?C <;' 1 ' + ; B?A6 N C< ' 99<;<@ A ' FCA; <;' ' C< + ; B?B<=< A @ AGG<A6<@ ' C< 61D<;A6 GA; EC16= ' C< AD= 6B 1= ' GA; ' =BGG ; <@ C1= D; C<;' C< A; . ' 9 % ' 1?B<6 F . . A @<@ D ' A;=CA6 @< (B; ' . EA= IA JB1=C<@ 1 . @<;' C< EA66= 9 G ; EC16= ' C< F = 1 B 1 A6 A; . ' > G ==<==1 ' 9 1=D E1 C C< F FB;;< F< 9 ;A F< A @ ?6A @ ' C<=< <I< = E<;< 9 66 E<@ D ' A ® ;<A ' <? 1A <@ 1 ' @ ' D ' +;1 F< A66< ;;A ;@ D< E<< ' ?6A @ ;A F< GA1 A @ + ; B?A6 D ' EC1FC C< <?< ' 9 + ; B?A6 A @ LBA@;BG6< 661A F< 8 C< LB<< ;<?< ' 9 GA1 ' B @<; > ' B 1 < C<1;' <99 ; =

9 ;' C< <PGB6=1 ' 9 CW 9A = % ' A;6 = A @ % ' 1?B<6 ' C< - 1 ? 9 O;<A ' (;1 A1 ' A @ C< - 1 ? 9 C< ;< FC G; . 1=<@ ' A==1= ' EA;@= C1= < @ 1 ' A @<91 <@ A @ 61 . 1 <@ . A <;' BFC EA= C< 9A . B= ;<A ' 9 C< LBA@;BG6< 661A F< EC1FC EA= =1? <@ 1 ' G;16 8 D< E<< ' C< 9 B;' F = 1 B 1 A6 B; = 9 C< <=

C< A= ' A6= ' A ;AF <@ C< A < 1 ' 9 B; G< EC1FC 6 >< @ ' E1 C C61P1< ' A ' C< B <JBA6 = ;B??6< . A1 A1 <@ D ' C< B6 A E AC . B@ A?A1 = ' C< +A=CA 9 ? G <C< . < ' 61 C1= ?B J@<S@@+ C< #WI 6 <@ IA==A6 ' 6 . = ' C< EC 6< 9 ;1A CA@ A6;<A@ ' GHDA B3 ? G 9A66< ' 1 ' C< CA @= 9 D;AC1 . C< = ' 9 <C< . < '9C< ' C< B; G<A ' G E<;< A ' C< B6 A 3 ;<JB<= 1 <;9<;<@ 1 ' C1= 9A I B;' D;AC1 . C E<I<; F 1 B<@ C1= FA;<<;' 9 F CJB<= F; ==<@ C< mAB;B= A @ 1 ' %<F< . D<; 8 D A1 <@ A @<F1=1 I< I1F ; ' A ' - 1<C

C< EC 6< B;>1=C A; . EA= A 1C16A <@ N A @ AD1 B@1 C1= @1= ;<==
1 . G6 ;<@ 9 B==1A = . 1 . . <@1A < A @ <1 FAF1 B= A==1= A F< C< MA;
;<G61<@ 9A; B;AD6 C1= AGG<A6 A @ A B==1A 96<< =G<<@16 < <;<@ C<
h (=GC ;B= ;A F< A @ ?6A @ . A@< ?;<A <99 ; =
>1A##<9< c ;< @<;' C< A==1= A F< A99 ;@<@ C<;' D B==1A B=<6<== C<
''D$K&', 22 + ; < A @ ;A F< <=G<F1A66 <A?<;6 1 =1= <@ CA C< B6 A
=C B6@ . A>< 6A;?< F F<==1 = 9 <;;1 ; C1= G E<;9B I A==A6 C<
D A1 <@ 9 ;' <C< . < C< EC 6< 9 ;1A A @ C< 1 . G ; A
C; B; G<ABYY# @1= ;1F 9 @A A D< @ C< A1B11= ; FC < I
LBS@7A' C< G; F<<@<@ D;AC1 . 3= FA . G 1 I1 W C1 . A?11<<
A =B=G< =1 9 A; . = N A @ C< 6A <;= A 1=91<@ E1 C C< F F<==1 = EC1FC
CA@ D<< D A1 <@ 9 ;' C1 . FC1<96 D C< G E<;9B 1 <; I< 1 9
;A F< FC<F><@ C< G; ?;<== 9 C1= A; . A @ ;<F; ==<@ C< AB;B=
a A 88b EC16= D C< B6 A 3 ;@<;= C< B==1A 96<< 6<9 C<
(=GC ;B= BFC EA= C< G =1 1 9 A99A1;= 1 C< A= EC< 1 D<FA . <
> E I CA A =<F;< ;<A CA@ D<< F F6B@<@ A >1A; ><6<==1 aSB6
88b D< E<< C< . A + ; < A @ B==1A D EC1FC C< B6 A
B @<; > 1 ;< B; 9 ;' C< MA;3 G<;G< BA G; <F 1 F6 =< C< %A;0
@A <66<= A?A1 = A66 9 ;<1? =C1G= 9 EA; B; G< EA= . BFC @1= B;D<@ D
C1= ;<A EC1FC G6AF<@ = A 1 G6< A @ C< EC 6< 9 C< B;>1=C
< . G1;< B @<;' C< <PF6B=1I< G; <F 1 9 B==1A N ?6A @ A @ ;A F<
I<C< . < 6 G; <= <@ A?A1 = 1 A @ D<1 ?= =BGG ; <@ D B= ;1A 9 ;F<@
C< MA;' ;<9;A1 9; . A I A161 ?= C1 . =<69 9 C< A@ I A A?<= <PAF <@ D
C1= F I< 1 9; . C< E<A> <== 9 C< B6 A
CA <I<;' G1 1 . A D< 9 ; . <@ 9 C< F @BF 9 ;A F< 1 C< 91;=
GCA=< 9 C< ?;<A A= <; JB<= 1 1 . B= D< A@ . 1 <@ CA =C< D A1 <@
9 ;' C< +A=CA 9 ? G . ;< CA ?6A @ F B6@ CA I< E1=C<@ A @ CA
=C< @1=GB <@ EK C B==1A F B;A?< B=6 A @ 91; . 6 EA= E1 C
;B C CA C< GG =1 1 A C1= G<;1 @ AFFB=<@ C< ;< FC 0 I<; . <
9 E<A> <== 1 1 = ;<6A 1 = E1 C B; G< N 9 ; . 1 @9B6 9 1 = ;1?1 1
>1 AFF B C< 1 96B< F< AGG<; A1 1 ? 1@<A= A= C< ;<6A 1 =
9 . @<; G< G6<= EA;@= <AFC C<; . A1 A1 <@ 1 ;<=G<F C<
AD= 6B < G E<;= A D6< A @ G; B@ A 1 B@< EC1FC EA= A= 9;<< 9; .
E<A> <== A= 9; . G; I FA 1 N 1 99<;<@ C< CA @ 9 9;1< @=C1G 61d
9;<< G< G6<= A @ C = EC E1=C<@ D< 9;<< N A @ 1 9 ; . <@ A = ;1F
A661A F< E1 C C< 6 ?;<A B; G<A G E<;EC1FC CA@ I1<E<@ E1 C
<;; ;' ;' @1=G6<A=B;< C< G GB6A;' . I< . < 9; . EC1FC 1 CA@ ;<=B6 <@

BFC' EA=(' E1 C' ;<=G<F ' '9 ;<1? ' A99A1;=(' C<' F @BF ' 9' C<' 1 1= ; ' 9' C<' C' F D<;'N 1 ' G<;=<I<;<@ 1 # C1=' F @BF ' B 16' 1 =' @1== 6B 1 (' A @(' EA;@=' C<' F6 =<' 9' 88(' C<' B; =' 9' B==1A(' + ; B==1A(' A @' B= ;1A(' CAI1 ?' F . . B 1FA <@' ' C<' ;< FC' 0 I<; . < ' A' C;<A < 1 ?' <(' 1 ' EC1FC' C< ' @<F6A;<@' CA ' C< ' C<6@' 1 ' ;<=G =1D6<' 9 ;' C<' G; ?;<==' 9' ;<I 6B 1 A; ' G; GA?A @1= . ' 1 ' C<1;' E ' A @' C<' <1?CD B;1 ?' = A <=(' C<' %B><' @<' (; ?61<(' EC ' EA=' 1 1= <;' 9 ;' ;<1? ' 99A1;=(' I<C< . < 6 ' (' G; <= <@' A?A1 = ' C1=' <(' @<F6A;1 ?' CA ' ;A F<' E B6@' ' =B99<;(' B @<;' A ' G;< <P (' A ' A; . <@' 1 <; I< 1 ' 1 ' E1 M<;6A @(' (<6?1B . (' ;' +1<@0 . 'N A;1@' CA (' . ;< I<;(' C<' 6 (A@ I1F<' A=' ' C<;' F B;=<' 9' AF 1 ' EC1FC' =C<' F B6@' 9 66 E' E B6@' D<' =BFC' A=' . 1?C ' D<' @1F A <@' D ' F1;FB . 0 = A F<=' A @' A' ;<?A;@' ' C<;' E '1 <;<= =

C<' AD1 < ' 9' C<' C' 9' F D<;' 1 ' 1 =' C . <' G 61F ' @B;1 ?' C< <A;=' 88' A @' 8 (' <PG =<@' 1 =<69' ' F;1 1F1= . ' 6<==' G F' G<;CAG=' D ' ECA '1 ' AFF . G61=C<@' CA ' D ' 1 =' 9 ;?< 9B6 <=' F D<;CYY 9' F<; A1 '1 . G ; A ' . <A=B;<=(' A @' 1 =' <?6<F ' ' FA;; ' B' .< (' C<;=' E611FC' 1 ' CA@' 1 =<69' G; G =<@' BGG ; <@' D ' A' . AK ;1 '1 ' <AFC' 9' C<' E ' CA . D<;=(' 1 ' G; FB;<@' C<' A@ G 1 ' 9' = . <(' =<9B6' A @' 1 . G ; A ' 6AE=' C<' 91 A F<=' E<;<' ;<= ;<@(' ' A' ;<?B6A;' = A <' D ' . <A =' 9' C<' A6 . =' =1 . B6 A < B=' I <' 9' C<' DB@?< =' 9' 88' A @' 8 ' C1=' I <' GB ' A ' < @' ' C<' F 1 B 6(' @< . A @=' 9 ;' =BGG6<0 . < A; ' F;<@1 =(' A @' ' B . A ' A ' C<' =A . <' 1 . <' = ;< ? C< <@' C<' DA=<=' 9' GBD61F' F;<@1 ' D ' A' KB@1F1 B=' 6AE' ;<=G<F 1 ?' C<' A . ; 1==< . < ' C<' 1 1= <;=' 9' A;' A @' C<' AI ' G;<=< <@' 6AE=' EC1FC' CA@' 6 ?' D<< ' @<=1;<@(' A @' EC1FC(' D ' . A>1 ?' ;A >' 1 @<G< @< ' 9' AF BA6' =<; I1F<(' 1 . G; I<@' C<' G =1 1 ' 9' C<' 991F<;=' 9' <AFC' =<; I1F<' C<' = A B <=' 1 ' 9 ;F<' ;<=G<F 1 ?' C<' <P<;F1=<' 9' F1 I 16' A @' G 61 1FA6' ;1?C =' D ' C<' F 6 1= =' <;<' A6= ' . @191<@' 1 ' A' 61D<;A6' =G1;1 ' C<' B F16=' 9' %<GA; . < =' A @' ; ; @1==< . < =' E<;<' ;< ;?A 1M<@(' A @' C<1;' . < . D<;=' . A@<' <6<F 1 I<'N YB' C<' 9B F 1 =' 9' C<=<' F B F16=' E<;<' 6<9 ' B FCA ?<@(' A @' ;< . A1 <@' d1BFC' ' ;<= ;1F <@' C<' G;1 F1GA6' 6AE' GA==<@' A ' 611=' G<;1 @' EA=' CA ' m3<?A;@1 ?' G;1 . A; ' 1 = ;BF 1 (' C<' <PF<66< ' E ;>' 9' ' 0B1M (' EC1FC' G< <@' 1 ' A66 ' C<' F . . B <=' 1 ' ;A F<' =FC 6=' 9 ;' . A6<' FC16@;< (' A @' A ' =A . <' 1 . <' F;<A <@' A' B;=<; ' 9' E<66 1 9 ; . <@' A @' FAGAD6<' . A= <;=' ' # ' . <A =' 9' C<' A@ . 1;AD6<' ;?A 1MA 1 ' 9' C<' ; . A6' G;1 . A; ' '=FC 6=' 1C' C<' FC1<9' G6AF<=' 9' C<' @<GA; 1;1< =' (B ' C1=' 6AE(' EC1FC' EA=' 'CA I<' Y d' D< <91F1A6' AA' 1 96B< F<' 'GBD61F' . ;A61 ' EC< ' C<' ?< <;A 1 ' EC1FC

*8' t : 4 ' 8 *

EA= C< 1 A = A < 9 FC16@C @ =C B6@ CA I< A;;1I<@ A A . A B;< A?<&
5F B6@ 9 ; C< . . < A . <61 ;A < C< = A < 9 C1 ?=& A @ A= 1
=61?C 6 1 F;<A=<@ C< F . . B A6 AP<=& C< G ; F B ; G GB6A 1
6 ><@ BG 1 A 91;= ;A C<; A= A <E FCA;?< CA A D< <91

C< E ;>1 ? F6A==<= = 1 =B99<;<@ 9; . C< ?;<A @1= ;@<; 1 1 @B=0
;1A6 A @ F . . <;F1A6 A99A1;= FAB=<@ D 1DC< <I 6B 1 9 8"N A @ C<
0 I<; . < & 9 ; C< GB;G =< 9A66<I1A 1 ? C<1; E;< FC<@ <==& @< . A @<@
A @ D A1 <@ 9 C< CA . D<; A CB @;<@ . 61 = D< < . G6 <@
E ;>= 9GBD61F B 161 N CB= F ;1DB 1 ?& I<; 1 I 6B A;16 & A @ B @<;
C< G;<==B;< 9A 1 . G<;1 B= <F<==1 & C< G; GA?A 1 A . ?= C =<
F6A==<= 9 C< G;1 F1G6< 9 C< ;1?C = 9 6AD B;& C< I<; F ; <; = < 9
= F1A61= . N EC16= 1 9A16<@ A>< GA1 = A AFC C< . C <E ;@<;
9 C1 ?=& <1 C<; D 61?C < 1 ? C =< AP<= EC1FC G;<==<@ . = C<AI16
C< . & ; D 1 ; @BF1 ? 6<?1=6A 1I< . <A=B;<= EC1FC E B6@ CAI<
6 E<;<@ C< G;1F< 9 ;AE 1 A <;1A6= A @ C< <F<==A;1<= 9 619< Y
< 1;<6 <?6<F <@& A6= & C< . <A = EC1FC E<;< G6AF<@ A 1 = @1=G =A6 D
A <PA??<;A <@ = = < . 9 F< ;A61MA 1 9 ; <P<; 1 ? A . ;A6 A @
G E<;9116 1 96B< F< I<; C< E ;>1 ? F6A==<= D . <A = 9 C< G<;1 @1FA6
G;<==& A @ CB= < 61?C < 1 ? C< . E1 C ;<=G<F C<1; E ;B<
1 <;<= = 1 C =1 ?B6A; D61 @ <== 1 6<9 C1= G E<;9B6 1 = ;B . <
< 1;<6 1 C< CA @= 9 1 = A@I<;=A;1<=& A @ C< 6A <; . A@< B=< 9 1
E1 C A66 C< A;@ B; EC1FC 1 = . < EA= 1 =G1;<@ D A;@< F I1F 1 =
A @ FC1 . <;1FA6 C G<=& 1 C<;= D @1=AGG 1 <@ A . D1 1 A @ 1 KB;<@
IA 1 & A @ 1 A66 D 1 . G6AFAD6< CA ;<@

C< . = 9 ; . 1@AD6< CAB = 9 1 =B; ;<F 1 E<;< C< 1 B . <;AD6<
g @??@ AB?$@<$@A =<F;< = F1< 1<=& EC1FC E<;< 9 ; C< . = GA;0 D ; 9 CW
9C = 1sEV; C< <I 6B 1 9 8" @<F;<< 9 C< B; 9 ==1M< 9
K(1?C A 911A +A;1= CA@ 1 8 @1== 6I<@ C< F1< 9 C< ;1< @= 9
C< +< G6<N DB 1 =G<<@16 ;<AGG<A;<@ B @<; C< A . < 9 C< F1< 9
C< 1?C = 9 A & EC1FC EA= ;?A 1M<@ 1 =<F 1 = F =1= 1 ? 9 E<
. < . D<; <AFC& C< B . D<; 9 EC1FC 1 +A;1= A6 < EA= < CB @;<@ A @
=1P E . B6 1 B@< 9 C<; A== F1A 1 =& FA66<@ C< 1 & C<
1?C = 9 CW +< G6<& C< +; <= <; = 9 SB6 & F F CA@ <= AD61=C<@ 1 0
1 . A < ;<6A 1 = E1 C C< F1< 9 C< 1?C = 9 A & A @ AF <@ 1 B 1=
1I1 C 1 C< DK<F 9 C< 6A <; EA= ;<<= AD61=C C< <GBD61F 9 2!

I) D?M><@# MBS@G@7 M>C @+<@73@C >#<MBD M G@7K <$; $C#K LB+ <M@ L><M B3 37@@
<7>C@ JK A#$ M<#K ; BC$3K$+ $+ 'D+@ >+C 'D#K , 2/ <M@ CD<$@A B+ 7>S ; ><@7$>#A

' CA@' G< 6 ' A@ G <@' A=' 1 =' G; ?;A . . <' C<' @<F6A;A 1 ' 9' C<' ;1?C =' 9' CA ' . A@<' D ' D<=G1<; ;<' A ' C<' A 1 A6' I< 1 M A @' = . <' 9' C<' _=<F 1 =(' 1 ' ;@<;' ' ;< @<;' C<' DK<F ' A ' _EC1FC' C< ' A1 . <@' C<' . ;<' A 19<= (' >' A . <=' EC1FC' AE ><' 9;1?C 9B669< . < . D;A F<=(' =BFC' A=' A;A (' B C &' A1 SB= (' A @' C<;=' ' 6<==' =1? 191FA ' C<=<' = F1< 1<=' _E<;<' F6 =<6 ' F <F <@' XI1 C' C<' <@1 ;1A6' F . . 1 <<=' 9' C<' @< . F;A 1F' K B; A6=(' A @' C<1;' G;1 F1GA6' ;?A ' EA=' # ' @ !' EC1FC' <I<; ' @A ' <PG6 @<@' 1 ' B ;A?< B=' A @' 9B;1 B=' @<F6A . A 1 =' A?A1 =' C<' <E' 0 I<; . < ' A @' C<' <= AD61=C<@' AB C ;1 1<=' C<' 0 I<; . < ' D; B?C ' A?A1 =' C<=<' K B; A6=' A' . B6 1 B@<' 9' AF 1 =(' 1 ' EC1FC' 1 ' EA=' ' +'dYd A6EA =' =BFF<==9B6(' A @' C< ' =<< . <@' ' @<;1I<' A ' 1 F;<A=<@' D 6@ <==(' A=' <66' 91' .' C<' KB@? . < =' EC1FC' F @< . <@' C<1;' F @BF ;=' A=' 9; .' C =<' EC1FC' AFJB1 <@' C< .

C<' . =' F<6<D;A <@' 9' C<=<' ;1A6=' EA=' CA ' EC1FC' C<' 6<F 1I<' CA . D<;(' EC1FC' CA@' D<< ' =CA . <9B66 ' ADB=<@' D ' # ' @ !' A @' FA66<@' [' C<' G; = 1 B <@' CA . D<;&' D; B?C ' 1 ' 88' A?A1 =' C<' F @BF ;' 9' CA ' GAG<;(' EC .' 1 ' F1 <@' D<9 ;<' 1 ' 9 ;' @<9A . A 1 ' C<' F @BF ;' IA=' F @< . <@(' DB ' C1=' @<9< @<;=(' 0 @<9; I' AIA1? AF' A @' ; . A @' A;;A=(' E<;<' . BFC' ;A1=<@' 1 ' GBD61F' <= 1 . A 1 ' D ' C1=' = ;B??6<' 1 ' EC1FC' <' 9' C<' ?;<A ' G E<;=' 9' C<' A <' CA@' < ?A?<@' E1 C' C< . (' A @' C<' CA . D<;' EA=' . ;<' 1 KB;<@' D ' C<' 1 =B6 1 ?(' AB@AF1 ' 9' C<' @<9< F<' CA ' 1 ' CA@' D<< ' D ' C<' I1;B6< F<' 9' C<' 1 F;1 . 1 A <@' A; 1F6<' C<' G GB6A;' GA==1 =' E<;<' 1 96B< F<@' D ' C<' <PG;<==1 ' 9' CA ;<@' A @' 9B; ' 9' GA; 1<=(' ' 6 ' 1 ' C<' K B; A6=(' DB ' A6=' 1 ' A' . B6 1 B@<' 9' 9;1?C 9B66 ' F 1FA6' GA . GC6< =(' EC1FC' E<;<' F;1<@' 1 ' C<' GBD61F' = ;<< =' A @' @1= ;1DB <@' D ' < =' 9' C B=A @=' B @<;' C<' G; <F 1 ' 9' C<' 6AE' ' EA=' <F<==A; '

' . @19 ' C<' <P1= 1 ?' = A <' 9' C<' 6AE' ' C1=' G 1 &Y' A @' d d '

C<' CA . D<;=' GA==<@' A' 6AE' IC1FC' =BD . 1 <@' C<' G; 9<==1 ' 9' F;1<;' A @' <66<;' 9' E;1 1 ?=' ' C<' GBD61F' EA =' ' C<' =B; I<166A F<' 9' C<' . 1 . 1F1GA6' AB C ;1 1<=' C<' 0 I<; . < ' A6=(' BD . 1 <@' ' C<' CA . D<;=' A C<;' G;<I< 1I<' 6A (' EC1FC' EA=' . BFC' ' D<' ;<?;< <@(' <=G<F1A66 ' A=' A' G<; . A < ' . <A=B;<(' 9 ;' 1 =' B6 <;1 ;' <99<F =' C<' &AE' 9 ;DA@<' C<' <P1= >S' B+ < F<' 9' A ' A== F1A 1 ' 9 ;' ;<61?1 B=(' G 61 1FA6(' ;' C<;' [+d hd ' +B;G =<=' B 6<==' =A F 1 <@' D ' A' 0 I<; . < ' 61F< F<(' EC1FC' EA=' A6EA =' <I FAD6<' C1=' 6A I' F B6@' ' BFC' =<F;<' = F1< 1<=(' EC16=' 1 ' I<;

Y' C<' ;1DB A6=(' 'D<1 ?' AGG61<@' ' ' C<' =BDK<F (' CA@ @<F6A;<@' CA ' C<' 6AE' 1 . 0 G =<@' ';<= ;A1 ' BG ' F;1<;=' 1 ' C<' <P<;F1=<' 9' C<1;' FA661 ?

7 " - 8 ' ! f ' " 0' ' : ! ' $ ' 8 * -'

= <GG<@' 1 =' DK<F ' D ' @<G;1I1 ?' G<AF<AD6<' F1 1M< =' 9' A B;A6' A @' I1 A6' 61D<; &'A @' =<;1 B=6 ' A AF><@' C<' 61D<; ' 9' E ;=C1G' ?;A <@' D ' C<' FCA; <;' C<' G;<=< A 1 ' 9' C1=' 6AE' EA=' ;<F<1I<@' E1 C' 6<?1 1 . A <' @1=0 JB1<' D ' . A ' 9' C =<' 1 ' EC =<' D;<A= =' C<' A AFC . < ' ' C<' <E' ;@<;' 9' C1 ?=' CA@' ' < 9<<D6<@' C<' 6 I<' 9' GBD61F' 61D<; N 1 ' FA;;1<@' C<' 1;;10 A 1 ' 9' GA; 1<=' ' 1 =' C<1?C &'A @' G; DAD6 ' G;<F1G1 A <@' C<' F;1=1=' EC1FC' 1 ' EA=' 1 =' DK<F ' ' G;<I< ' AI1 ?' D<< ' A@ G <@' ' C<' 7 C' A;FC'D ' C<' %<GB 1<=&' 1 ' GA==<@' C<' CA . D<;' 9' +<<;=' ' C<' ! C' G;16' a 8 b ' (B ' @B;1 ?' C1=' =C ; ' 1 <; IA6' A 'B <PG<F <@' I <' 9' C<' %<GB 1<=' CA@' 6<@' ' 1 . G ; A ' . @191FA 1 =' 1 ' C<' F . G =1 1 ' 9' C<' AD1 < &' 1 C P1 ' A6 <;1 ?' <1 C<;' 1 =' < @< F ;' F B;=<' 9' AF 1 ' C1=' I <' EA=' FAB=<@' D ' C<' G;<=< A 1 ' 9' A' G; G =A6' 9 ;' C<' GA . < ' 9' A ' 1 @< . 1 ' @< . A @<@' D ' C<' 1 <@' A <=' 9 ;' . <;1FA ' I<==<6=' FAG B;<@' D ' ;< FC' =C1G=' @B;1 ?' C<' . G1;<' C<' A . B ' 9' C1=' 1 @< . 1 &' EC1FC' EA=' AF> E0 6<@?<@' ' D<' KB= 6 ' @B<' D ' AG 6< ' C1 . =<69&' CA@' D<< ' ;<@BF<@' 1 ' 8 ' ' E< 91I<' . 1661 =' D 'A' ;<A ' <P<FB <@' D< E<< ' +;A F<' A @' . <;1FA

@3DA>#B3'<M@'$+I
@<. 1 I' @B< ' G; G =A6' ' A ' AF ' 9' E<A> <==&' A @' 1 ' EA=' ;<K<F <@' DI' A . AK ;1 ' 9' =1P ' ' @<' (; ?61<K' C<' 1 1= <;' 9 ;' ;<1? 91A1;=&' I B6@' ' =BD . 1 ' ' C1=' ;<DB99&' A @' ;<=1? <@' C1=' G ; 9 61 ' C<' 1 1= <;1A6' F;1=1=&' F =1@<;1 ?' C<' ; BD6<@' = A <' 9' C<' 0 I<; . < 'A @' 9' ;A F<' A ' CA ' 1 . <&' EA=' 9' =C ; ' @B;A 1 ' @ . 1;A6' @<' 1? ' =BFF<<@<@' C<' %B><' @<' (; ?61<N ' C1<;=&' EC16=' ;< A1 1 ?' C<' G ; 9 61 ' 9' +BD61F' ;>=&' D<FA . <' 1 1= <;' 9' C<' <;1 ;N ' %B ' FCA <6' CA@' C<' G ; 9 61 ' 9' ;A@<N A @' ' +<;=16' ;<G6AF<@' ' (A; C<' A=' 1 1= <;' 9' SB= 1F<

I<; C1 ?' E' F =G1;<@' ' D;1 ?' AD B ' A' 91 A6' = ;B??6<' E1 C' C<' <0 GBD61FA =' <' 1=' A= 1=C<@' A ' C<' G;<=< ' 1 . <' A ' C<' 1 @ . 1 AD6<' AB@AF1 ' 9' C<=<' . < &' A6 . =' A66' 9' EC .' E<;<' <1 C<;' @< . A? ?B<=' ;' . A@' @1=F1G6<=' 9' (ADF<B9' A @' D<=G1<;;<&' A @' . A ' 9' EC .' E<;<' @1=0 1 ?B1=C<@' 9 ;' C<1;' A6< =' A @' C<1;' G;1IA <' I1; B<=' ' B @<;= A @' 1 ' E<' . B=' A><' 1 ' F =1@<;A 1 ' C<' 1 96B< F<' 9' < CB=1A= 1F' C<A; =&' C ; B?C6 ' F I1 F<@' 9' C<1;' ;B C' C<' C< ;1<=' 9' C<' <GBD61FA =' E<;<' @ BD 6<==' @A ?<; B=' A @' 1 AGG61FAD6<&' DB ' C< ' @;<A . ' 9' A' F . 0 G6< <' = F1A6' ;<?< <;A 1 &' C B?C ' CA ' C< ' CA@' = 6I<@' C<' ?;<A <= ' G; 0 D6< . =' 9' C<' ;?A 1MA 1 ' 9' . @<; ' 1 . <=&' A @' . A ' 9' C<' D<= ' 9' C< . ' @1=G6A <@' C<' @<I 1 ' 9' C<; <=' A @' . A; ;=' 1 ' C<1;' < @<AI B;='

;<A61M< C<1;' 1@<A=' C< ' E<;< 1 @1? A ' A ' C<' 1 @<91 1 < A @' 9A A6' A@K P1 . . < ' 9' . A ' G GB6A;' . <A=B;<= EC1FC' CA@' D<< ' G; . 1=<@' 1 ' G;1 F1G6< D ' C< FCA; <;' 9' 8"(' A @' A ' C< <?6<F ' 9' . A ' C<;= EC1FC' DA@' D<< ' <P 66<@' D ' C< . < ' E' 1 ' G 1I . ;' C< ' CA@' ' A>< '1 ' AFF B ' C< 1 . G<;1 B= <F<==1 ' 9';<<= AD61=C1 ?' ;@<;' D<9 ;< ?1I1 ?' 9;<=C' ?BA;A <<= '61D<; (' A @' C< '=AE' ;<A= '1 ' <I<; '@<6A ' C< ' E<;<(' . ;< I<;(' @1=?B= <@' A ' C< =B@@< ' <6<IA 1 ' 9' C =< A@I FA <= , C =< G; 9<== ;= ;' I;1 <;= E1 C' EC .' C< ' CA@' D<< ' A== F1A <@'9 ;' 919 << ' <A;=(' <1 C<;'1 ' C< K B; A61= 1F' F . . 1 <<= ;'1 ' G 61 1FA6' F6BD=(' A @' EC (E' CA ' C< ' CA@' A A1 <@' G E<;' A @' C B;=(' CA@(' C< ' =A1@(' @<=<; <@' C< AB=< 9' C< G< G6<(' EC16= ' 61< ' E<;< C< . =<6I<= G<;=<FB <@' A @' G; 0 =F;1D<@' 9 ;' CAI1 ?' ;< . A1 <@' 9A1 C9B6' '1 ' 1 A66 (' 1 . DB<@' A= C< 'E<;< E1 C' C< G;1 F1G6< CA ' C<' = I<;<1? 'G; G<;6 ' ;<=1@<@' 1 ' C< G< G6<(' C< ' ;<?A;@<@' C< <E' G E<;' A= A ' B=B;G<@' G E<;(' EC1FC' C< G< G6< CA@' ' D<< ' FA66<@' BG ' '=A F 1 (' A @(' A= CA= D<< ' I<; ' ;B C9B66 ' D0 =<; I<@(' C1 ?' AGG<A;= . ;< 1 6<;AD6< 'A' . A ' CA ' ' CAI< ' D< ' C =< EC ' AGG<A;' 'C1 . ' 'CAI< ';1?C ' 'F . . A @' C1= D<@1< F< C< = ;B??6< F . . < F<@' 1 ' C< @<GA; . < =' = A @' . A ' C<;' F1 1<=(' =BFC' A= A1 ' 1< <(' 6<; . ' <; ;A @(' 1< <(' @LDJ#$?>+' $+0' C 6 =(' ; 1=(' B <I166<(' 0;< D6<(' A @' A;=<166<=(' E<;< A6 . = ' =1 . B6 A < B=6 ' C< C<A ;<= 9' 1 =B; ;<F 1 = ;' =<;1 B= @1= B;0 DA F<=' '<I<; '@1;<F 1 ' C< D;A FC<= 9' C< =<F;<'= F1< 1<= ?AI< @1< =1? A6' 9 ;' ;<I 6B 1 (' FA661 ?' A66' C< < < . 1<= 9' C< 0 I<; . < ' 'A; . =(' ;A66 1 ?' B @<;' C< <GBD61FA '96A?' A' . B6 1 B@< 9' = ;A ?<;= A @' G 61 1FA6' ;<9B?<<=(' A @' 1 = 1?A 1 ?' ' ;<I 6' C< =BD 991F<;= A @' = 6@1<;= 9' C< A; . ' C< F1< ' 9' C< 1?C = 9' A ' CA@' A ' A99161A <@' A== F1A 1 (> E ' B @<;' C< A . < 9' C< B BA6(' EC1FC' CA@' D<< '9 B @<@' 9 ;' C< GB;G =< 9' . B BA6' A1@' A @' A==1= A F<(' A @' E1 C B ' A 'G 61 1FA6' DK<F ' C< 6A <;' . A@< C< 6AE' ;<=G<F 1 ?' A== F1A 1 = C< FFA=1 '9 ;'1 96A . 1 ?' C< G GB6A;' GA==1 =N A @' C< EA?<= 9' C< E ;> . < ' < ?A?<@' 1 ' C< ;B?' 1A B9AF ; ' CAI1 ?' D<< ' =61?C 6 ' ;<@BF<@' D ' C< . A= <;' . A B9AF B;<;=(' C< B BA661= = ;@<;<@' A' ?< <;A6' = ;1><' . < 9' C< ;1 ?6<A@<;= E<;< A;;<= <@' A @' D; B?C ' ' ;1A6(' A @' C< F . . < F< . < ' 9' G; F<<@1 ?= A?A1 =' C< . ' EA= A' =1? A6' 9 ;' C< <GBD61FA = ' . A><' A ' A AF>' 6b1I1@<@' 1 ' C;<< ?;<A ' D @1<=(' C< ' ;AG1@6 ' F I<;<@' C< @LDJ#$?>+' $+0' '11 ' E1 C' DA;;1FA@<=' 0< <;A6' . A;(' F . . A @<;' 9' C< KB+A' A @1 ' C< Y11I1=1 (' A @' C< +;<9<F (' '@<' OA=GA;1 (' ;<=1= <@' C< 1 =B; ' 1=Y

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A . F<@ A @ C< O I<; . < ' AGG 1 <@ C< = ' 9 SB < A= C< @A ' 9 ;' C< ?< <;A6 <6<F 1 =' ' I<; ' = . A66 B . D<;' 9 C< . < . D<;= EC ' <;< GBD61F6 ' > E ' ' D< <GBD61FA = E<;< ;<<6<F <@N DB ' C< F . D1 <@ <99 ; = 9 C< <GBD61FA = A @ C< GA; ' 1=A = 9 C< 6A < O I<; . < '1 ; @BF<@ E< ' <?1 1 . 1= ='1 ' C< <E CA . D<; A @1 ' C< 91;= ' ;A > 9 C =< EA= < 9 C< . = ' < . 1 < ' . < . 0 D<;= 9 C< ;< FC DA; ' (<;; <;' A ' <E . < . D<;= =E<66<@ C< =<; IA 1I< . AK ;1 DB ' ECA '1 ' ?A1 <@ 1 ' B . D<;='1 '6 = '1 ' B A 1 . 1 ' C< G1 1 = 9 1 = . < . D<;= E<;< . ;< @1I<;=< A @ . A ' @<GB 1<= E1=C<@ CA ' C< I1F ;1<= 9 G;16 EC1FC CA@ D<< ' =1 . B6 A < B=6 ' ?A1 <@ D ' C< GA; ' 9 ;@<; =C B6@ =<; I< A= A' = A; 1 ?' G 1 '9 ;' A' F F161A ; ' A @ . ;< G GB6A;' G 61F

7 ' " C*' B ' ' ' '

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&' = A <' 9' 6?<;1A' ?A I<' ;1=<&' 1 . . <@1A <6 ' A9 <;' C<' <6<F 1 =' 9' 8 &
' A' 9;<=C' . 1 1= <;1A6' . @191FA 1 &' C<' ;<A6' FAB=<' 9' EC1FC
) $+$A<@7$>#' ?7$A$A'
B+' <M@' # @7$>+' I1A=' C<' 1 F . GA 1D161 $&' 9' FCA;AF <;' A @' EA ' 9' A' ? @
aD@A<$B+ ' B @<;= A @1 ?' D< E<< ' A;=CA6' B6 &' C<' + ;<=1@< ' 9' C<
B F16&' A @' 1 =' . = ' 1 96B< 1A6' A @' <6 JB< ' . < . D<;=&' ' O B1M ' A @'
C1<;=' ' 6 ?' AD= ;D<@' D ' C<' @1911FB6 1<=' A < @1 ?' C<1;' C . <' A @'
9 ;<1? ' G 61F &' C<' O I<; . < ' CA@' ?1I< ' DB ' I<; ' 1 =B991F1< ' A < 1 '
' 6?<;1A' @B;1 ?' C<' 91;=' <A;=' EC1FC' CA@' 9 66 E<@' C<' <I 6B 1 '
C<' ;< FC' G E<;' 1 ' CA ' F B ; ' EA=' @1=GB <@' D ' C<' ;AD=' A @' C<
B;>=' E1 C' A6 <; A <' =BFF<==' A @' @<9<A ' I<;' C<' EC 6<' <;;1 ; ' 9' C<
6@' O I<; . < ' D< E<< ' (A' A @' ;A N A @' A=' C<' ;< < 1 ' 9' C1='
G ==<==1 ' @< . A @<@' F =1@<;AD6<' =AF;191F<=' E1 C B ' 99<;1 ?' A ' 1 . . <0
@1A <' ;< B; &' . A ' I 1F<=' E<;<' 1 ' 9A I B;' 9' 1 =' ADA @ . < ' (B &' '
C<' C<;' CA @&' C<' ;< < 1 ' 9' 6?<;1A' EA=&' E1 C' ;<=G<F ' ' B; G<' A @'
G = <;1 &' A' G 1 ' 9' C B;' 9 ;' ;A F<' A @' 9' ?< <;A6' 1 <;<=' '
C;1= 1A 1 ' <?A;@<@' 9; .' C1=' E 9 6@' G 1 ' 9' I1<E&' C<' ADA @ 0
. < ' 9' C<' F JB<;<@' G; I1 F<' EA=' 1 . G ==1D6<&' A @' 1 ' EA=' @< <; . 1 <@'
CA ' ;A F<' =C B6@' ' 6 ' ;< A1 ' 1 =' F JB<= &' DB ' 1 F;<A=<' A @' F 91; .'
1 ' (B ' C<' < 1;<6 ' . 161 A; ' A B;<' 9' C<' O I<; . < ' 9' C<' ;< FC'
G ==<==1 =' 1 ' 9;1FA&' EC1FC' EA=' D= 1 A <6 ' @<9< @<@' D ' A;=CA6' B6 &'
C<' 1 1= <;' 9 ;' A;' A @' +;<=1@< ' 9' C<' AD1 < &' CA@' ?1I< ' ;1=<' '
B . <; B=' ADB=<=&' A @' 1 ' C<' < <=' 9' . A ' C<' . . < ' =<< . <@' ' CA I<
F . <' EC< ' 1 ' B?C ' ' D<' ;<G6AF<@' D ' A' F1I16' A@ . 1 1= ;A 1 ' C1='
G1 1 ' EA=' CA ' 9' ' C1<;=' A @' O B1M &' A=' E< ' A=' 9' C<' . AK ;1 ' 9'
C<' . < . D<;=' 9' C<' B F16 ' C<' A;=CA6&' G<;=1= 1 ?' 1 ' C1=' I1<E=

< @<;<@' C1=' ;<=1? A 1 ' C<' - 1 ?' AFF<G <@' 1 (' A @' AGG 1 <@' A=' C1=' =BFF<== ;' A;=CA6 O<;A;@(<' 9' C<' . = ' < . 1 < ' . < . %<;=' 9' A' GA; ' EC1FC' D<?A ' ' D<' G< 6 ' F = 1 B <@') >7>M>b' ! @7>7C 7@L#>?@A') >7AM>#
BD$<' >A' 7@A$0
A' C1=' G<;1 @(A @' EC1FC' 1 ' 1=' E' @1 . <' ' . A><' C@+<B3<M@ 'BD+0'
I , , 2/
> E

A ' =<; IA 1I<' %<GB 1<=(A ' C<' F . . < F< . < ' 9' C<' <E' =<==1 (D<?A ' ' D<61<I<' CA ' 19' C<' = FA66<@' G 61F ' 9' ;<=1= A F<' CA@' 'A ' 91;= ' =AI<@' C<' F B ; ' 9; . ' A A;FC ' A @' C<' 9B; ' 9' C<' C1;@'+A; 9
G 61 1FA6' 9AF 1 =(CA ' =A . <' G 61F ' . 1?C ' <I< BA66 ' D<F . <'
1 =B991F1< ' A @' 1;;1 A 1 ?(A @' C<;<9 ;<' @A ?<; B=' C<1;' 1@<A=' ;<=G<F 0
1 ?' C<' <F<==A; ' ;<=B6 =' 9' C<' <I 6B 1 ' 9' 8"(1 ' . A ' ;<=G<F =' ;<=< . D6<@' C =<' 9' C<' @ A= 1F' <9 (9; . ' EC . (C E<I<;(C< ' C<6@' A6 9(9<A;1 ?' C<' 166B=1 =' A @' A??;<==1I<' 6A ?BA?<' 9' CA ' G ; 1 ' 9' C<' _ CA . D<;(A @' <=G<F1A66 ' ;<?A;@1 ?' E1 C' AI<;=1 ' C<' 61 >=' EC1FC' F 0
<F <@' C< . ' E1 C' C<' <P ;< . <' <9 ' C<1;' B . D<;(1 . G<;F<G 1D6<' A ' 91;= (1 F;<A=<@' @A ' D ' @A (A @' C< ' ?;A@BA66 ' 9 ; . <@' B ' 9' C<' =<I<;A6' . 1 ;' GA; 1<=' 1 ' C<' 6<F 1I<' CA . D<;' A' C1;@' +A; (EC1FC' EA=' ' E1 C B ' A' F<; A1 ' A A6 ? ' E1 C' C<' G 61 1FA6' ?; BG=' ' E611FC' C<' =A . <' _ A . <' EA=' ?1I< ' A ' IA;1 B=' G ; 1 =' 9' C<' C1= ; ' 9' ;A F<' 1 ' C<' =1P << C(F< B; (A @' 1 ' C<' = 1 B< ' ==< . D6 (, . @<;A <' GA; 1<=' = A @1 ?' D< E<< ' C<' AD= 6B <' A @' <PF6B=1I<' GA; 1<=(A @' 9 ;' C1=' ;<A= ' @<F;1<@' A @' F< =B;<@' D ' A N A @' EC1FC(A6 C B?C' FC1<96 ' F =1= 1 ?' 9' . <;<' EAI<;<;=' A @' G<;= =' =>169B6' 1 ' =G 1 ?' B ' GG ; B 1 1<=' 9' aB; C<;1 ?' C<1;' E ' I1<E=' E1 C B ' ;1=>1 ?' A C1 ?(<I<; C<6<==' ;<F> <@' 1 ' C<1;' ;A >=' A @' A ' C<1;' C<A@' = . <' 9' C<' D<= ' A @' . = ' < 61?C < <@' . < ' 9' C<1;' <I<;A6' G<;1 @=' C<' C1;@' +A; (B @<;' C<' 0 I<; . < ' 9' SB6 ' A=' A (9 ; . <;' G<;1 @=(A@I FA <@' F F161A ; ' . <A=B;<=(A @' = B?C ' ' <99<F ' A' FG . G; . 1=<' D< E<< ' A;@< ' A @' 1;;<0 F F16AD6<' G1 1 =
C<' <6<F 1 =' 9' 8 ' ;A1=<@' C<' B . <;1FA6' = ;< ? C' 9' C<' C1;@' +A; ' ' <1?C ' @<GB 1<=' <' 9' 1 =' . = ' < . 1 < ' . < . D<;=(' %BG1 (=< 1 ;(EA=(A ' C<' F . . < F< . < ' 9' C<' 6<?1=6A 1I<' _ <=1 ' a B?B= N' 8 b(=B . . <@' ' C<' G;<=1@< 1A6' FCA1;N' A @' 1 ' C1=' CA >=' ' C<' CA . D<;' 9 ;' CAI1 ?' <6<F <@' C1 . (A=' 1 ' C<' _A@@;<=' I <@' D ' C<' 6A <;' 1 ' A =E<;' ' C<' =G<<FC' 9; .' C<' C; <(C<;<' EA=' A' = ;A1 ' 9' D6A . <(6 ' GA; 1A66 ' F F<A6<@' D< <A C' <JB1
' ' -' -

I FA6 6A ?BA?< C< =<==1 EA= G; ; ?B<@ %<F<. D<; A @ 1 C< 1 <; IA6 A ?;<A JB<= 1 CA 9 A A . <= EA= @<DA <@ 1 C< B F16

A;=CA6 O<;A;@ C B?C CA C< 1 . < CA@ F . <#9 ; C<@<F6A;A 1 9 A ?< <;A6 A . <= < CA@ A6;<A@ <PG;<==<@ A6 E1=C CA 1 . 1?C D< ?;A <@ A @ E CA C< CA@ D<F . < C< C<A@ 9 C<5 AD1 < C< 1 =1= <@ BG D A1 1 ? 1 D<1 ? 1 C1= =BGG ; <@ D C< C1;@ +A; DB GG =<@ D C< . AK ;1 1G C< B F16 A @ C< E@ CA . 6 ;= C< . A;=CA6'= E1=C 1 9AF AGG<A;<@ D< G;<. A B;<J 9 ; A A . <= ?;A <@ D A G;1 F< 9A16= <99<F 1 = DK<F A @ 1= @A ?<; B= 19 1 = <A@ 9 G; I1 ? C1= ?< <; =1 ; = ;< ? C 1 1= 6 ;<?A;@<@ A= A =1? 9 C1= E<A> <== BFC EA= C< 61?C 1 EC1FC A A . <= E 1@@ AI< D<< ;<?A;@<@ A C< G<;1 @ E< ;<A 9 D C< G<;= = A . <= 1<@ %<. A ? ?1= . A6 C B?C @<9<A <@ 1 C< = ;<< = EA= = 166 < ;< FC<@ 1 =<F;< = F1< 1<= A @ CA@ 6 = < 9 1 = 166B=1 = ; AB@AF1 = ;A?< @;1I< C< 6A= GA; P = . <PG6 @<@ 1 9B;1 B= . < AF<= C< E C B=A @ AFFB=<@ G<;= = EC CA@ D<< A>< E1 C A; . = 1 C<1; CA @= ;<6 1 ? C<1; B . D<;= A @ < F B;A?<@ 9; . E1 C B 9 ; C< . = GA; G; <= <@ 1 A@IA F< A?A1 = A GA;@ A @ @<91<@ C< O I<; . < ; ; C< . @<; C<=< F1;FB . = A F<= A A . <= EA= 1 . G ==1D6< A @ C< - 1 ? EA= ;1?C 1 ;<911=1 ? 1 C1= ;<9B=A6 FAB=<@ C< ;< 1;< . < 9 A;=CA6 $A ; $AA># B3 O<;A;@ EC1FC EA= =G<<@16 9 66 E<@ D C< ;<=1? A 1 1# %(F@ 1= A6 . = C< IC 6< AD1 < N A @ C< D<?A < 9 <@7$3#5 ?7$A$A C =< F;1=<= 1 EC1FC C< ;<1 = 9 G E<; GA== ;AG1@6 9; . CA @ CA @ A @ A;< ==<@ AD B A CAMA;@ C< . < FAGAD6< 9 C 6@1 ? C< . D<1 ? B E1661 ? @ = A @ A C< =A . < 1 . < B E1661 ? CA C< =C B6@ D< C<6@ D C<;=N A @ 1 EC1FC C<;< 1= A @1=G6A 9 C< . = G1 19B6 A @ K<A6 B= GA==1 =A @ C< ?;AI<= 1 <;<= = A;< =BD ;@1 A <@ . 1=<; AD6< A @ =<691=C FA6FB6A 1 = C1= = A < 9 C1 ?= 1= D< 9 B @ B 9 ; B A <6 . ;< <=G<F1A66 1 ;<G;<=< A 1I< ? I<; . < =A @ 1 C< < <= 9 =BG<;91F1A6 D=<; I<;= C; E= @1=F;<@1 BG C< . N C E<I<; CA C<=< =A . < GA==1 = A;< D<9 B @ <6=<EC<;< DB D<FAB=< 1 ;<0 G;<=< A 1I< ? I<; . < = C<;< A;< . ;< GG ; B 1 1<= 9 ; A @ . ;< = 1 . B6A = C<1; ?; E C

C< F;1=1= 6A= <@ <1?C . C= @B;1 ? EC1FC E< 91 @ A 1 1= ; 9 C;<< @A =3 @B;A 1 B @<; C< G;<=1@< F 9 C< %B>< @< (A==A A @

C< ' C< 6@ AD1 < ;<F = ;BF <@ B @<;' C< %B>< @< ;<I1= EC1FC 6A= <@ C;<< . C=' '6< ? C ' C< C A;FC 87 @?B+A<7D?<$B+' 5 C< G 61F ' 9 C< 16 C' F D<;' = 166 G;<IA161 ?' C< %B>< F D<;YB @<;YY# @< (; ?61< AFF<G <@" C< G;<=1@< F ' 9 C< B F16 A @ EA=' C; B><'S< K 1 <@ D ' Y C1<;=' A @ OB1M Y3 5 (; ? <

C1=' 1 1= ; F A1 1 ?' A=' 1 ' @1@ C< . =' <6 JB< ' A @ 1 96B< 1A6 . < . D<;=' 9 C< =<;IA 1I< GA; =<< . <@ ' G ==<==' E1 C1 ' 1 =<69 A ' C< <6< . W < 9 = ;< ? C A @ 6 ?<I1 ' DB ' <I<; C<6<==' 1 ' = . E1I<@ DB ' A =C ; ' 1 . < A @ 1 =' D;1<9 <P1= < F< EA=' A6 . =' EC 66 ' A>< ' BG E1 C C< ;1A6 9 C< G;16 1 =B;;<F 1 1= =' A @ 61< @1=FB==1 ' 9 C< =<;1 B=' . <A=B;<=' EC1FC E<;< = ' @< . A @<@ D ' C< F . . 1==1 ' 9 < 9 C< ?;<A <= ' B ;A?<='

C< G<;= =' 1 FB6GA <@ 1 ' C< ?;<A ' ;1A6 E ' D< FA;;1<3@ ' D<9 ;< C< B; ' 9 +<<;=< B . D<;1 ?' AD B ' E ' C B=A @ E<;< ;1A6 9 C< G; ' @1I1@<@ 1 ' F6A==<=' AFF ;@1 ?' ' C< F1 1<=' 1 ' EC1FC C]' 1 ' =B;;<F 1 ' CA@ D; >< ' B ' 1 C ;<=G<F ' ' C< ?;<A <;' B . D<;' 1 ' EA=' @<F6A;<@ CA ' C< < EA=' ' <I1@< F< A?A1 =' C< . A @ C< ' E<;< =< ' A ' 61D<; ' C< B; @ . 1;AD6 ' G;<=1@<@ I<;' D ' CA F<66 ;' +A=JB1<; _ E . ;< CA ' =<I< ' <A;=' 9 A?< =B . . <@ D<9 ;< 1 ' A CB @;<@ 5A @ =1P 9 B;' AFFB=<@ G<;= = 6 ' 9 ; C;<< 9 EC .' E<;< F 0 B . AF1 B=' ' C<;' B; ' 1 ' C< >1 ?@ .' F B6@ CAI< 91 6 ' F @BF <@ C1=' . < . ;AD6< ;1A6 1 ' EC1FC C< AFFB=<@ EC ' 1 @B6?<@ 1 ' B 0 DB;= =' 9 1 F;<@1D6< ;A?< E<;< =BGG ; <@ D ' E< ' K B; A6=' D<0 6 ?1 ?' ' IA;1 B=' =<F 1 =' 9 C< GG =1 1 A @ C< G< 6 ' AI E<@ = . GA C ' 9 . A ' . < . D<;=' =1 1 ?' ' C< <P ;< . < <9 ' 1 ' C< 6<F 1I< CA . D<;

C< EC 6< 9 C< <GBD61FA ' GA; ' C?@ B A 1 . B=6 ' A?;<<@ ' ;< @<;' C< @<DA <=' = ; . ' 19 ' 1 . G ==' 1D6< CB=1A= 1F . < = ; < 9 C< .' I<; ' D=FB;< A @ C<;=' 9 C< .' A6;<A@ ' > E A66 @<F6A;<@ < < . 1<=' 9 C< <E' . A;FC . A@< C< . =<6I<=' 991F1 B=' @<9< @<;=' 9 C< AFFB=<@ 9B66 ' ;<= 6I<@ ' =GA;< C< G<<;=' <1 C<;' 1 I<F 1I< ;' 1 =B6 A @ ' CB;6 DAF>' C< AFFB=A 1 =' 9; .' C< D< FC 9 C< AFFB=<@ ' CA ' 9

Y C< %B>< @< (; ?61< CA@ I<; ';<A= AD6 ' . A@< C< GA==1 ?' 9 A I < 9 ;' C< GA 0 . < ' 9 C< 1 @< . 1 '@B< ' C< 1 <@ A <=' A F @1 1 ' 9 C1=' ;< B; ' ' C< B F16' C< JB<= 1 ' CA16 D<F . < . BFC F I< 1<@ DB ' <I<; C<6<=' C< 6AE';<6A 1I< ' C1=' @<D ' EA=' G;<=< <@ ' C< 11A . DF;' 1 ' , 2.' A @ GA==<@

C<' K11@?<= Y' ;' C<' GB;G =<' 9'G;<I< 1A?' C1=' 1 6<;AD6<' =FA @A6(' C<' +;<=1@< ' 9' C<' B;(' C<' CA F<66 ;' +A=JB1<;(@<F1@<@' CA ' C<' AFFB=<@' F B6@' 6 ' D<' @<9< @<@' D ' ;<?B6A;' A@I FA <=(' EC .' C< ' E<;<' A ' 61D<; ' ' =<6<F ' 9; .' C<' EC 6<' 9' C<' ;< FC' DA;' C<' AFFB=<@' G; <= <@' B A 1. B=6 ' A?A1 = ' C1=' @<F1=1 (' A @(' @<F6A;1 ?' CA ' C< ' E<;<' ' G<; . 1 <@' ' @<9< @' C< . =<6I<=(' ;<9B=<@' ' G6<A@' C< (' DB;= 1 ?' 9 ; C' 1 ' I F19<;A 1 =' A @' I1 6] ' ?<= B;<=(' C< ' G;AF 1FA66 ' ;< @<;<@' A66' @1=0 FB==1 ' 1. G ==1D6<' ' EA=' <F<==A; ' ' =B=G< @' C<' =1 1 ?(' A @' C<' B;' @<F6A;<@' CA ' 1 ' 9B B;<' C<' ;1A6' E B6@' D<' FA;;1<@' ' 1 ' C<' AD=< F<' 9' C =<' EC ' 1 <;;BG <@' C<' G; F<<@1 ?=' D ' C<1;' I1 6< F< 9' # C<;' @<F1=1 ' 9' C<' B;(' 1==B<@' 1 ' SB6 (' @<F6A;<@' CA ' C<' FAB=<=' =C B6@' D<' @1=K 1 <@(' A @' CA ' <AFC' FA <? ; ' 9' C<' AFFB=<@' '=C B6@' D<' ;1<@' =<GA;A <6 ' C1=' @<F1=1 ' ?AI<' ;1=<' ' =F< <=' C<(' I1 6< F<' 9' EC1FC' GA==<@' A66' D B @=(' DB ' EC1FC' 9A16<@' ' E<A; ' <1 C<;' C<' GA 1< F<' ;' C<' 91; . <==' 9' C<' KB@?<=' ' 9<E' @A =' A9 <;EA;@=(' E< <1?C ' 9' C<' G;1 F1GA6' G;1= <;=' 1 ' C<' +A;1=' F6A==' F ;1I<@' ' <=FAG<(' A @' C< ' C<' ;1A6' G; F<<@<@' E1 C B ' A ' 9;<=C' 1 F1@< =' ' CB @;<@' A @' =1P' AFFB=<@' _G<;= =(' 1 F6B@1 ?' . A ' EC ' E<;<' ;1<@' 1 ' C<1;' AD=< F<(' E<;<' 9 B @' ?B16 ' A @' =< < F<@' ' IA;1 B=' GB 1=C . < =(' C<' =<I<;<= ' 9' EC1FC' EA=' ;A =G ; A 1 ' C<' .9 ' 9' +<<;=' @1=G6A <@(' 1 ' C<' F @BF ' 9' C1=' @1991FB6 ' . A <;(' A=' . BFC' . @<;A 1 ' A=' F B;A?<(' A @' EA=' ;<A66 (' C<' ;A . GA; ' 9' C;<A < <@' = F1<

C<' ;1A6=' 6A= <@' 1 <' . B C=(' A @' 6 ?' D<9 ;<' C<1;' F F6B=1 ' GBD61F' A < 1 ' EA=' @1I<; <@' 9; .' 1 ' D ' A ' <P<F;AD6<' F;1 . <

' B1=' +C161GG<' CA@' A6;<A@ ' <=FAG<@' =<I<;A6' A < . G =' A ' A==A==1 A 1

<<@;L<B3' (B<M@7' L#B<A ' 3B7; @C' S$<M' <M@' A>; @' BJR@?<' M>C' J@@+ $@>?M$', 2. ' @1=F I<;<@(' EC< (' ' C<' C' SB6 (' 87(' C<' C ?(' 1 ' =G1 <' 9' = . <' IA?B<' EA; 1 ?=(' ;<= 6I<@' ' C 6@(' A' ?;A @' ;<I1<E' 9' C<' A 1 A6' 0BA;@=' ' C<' (B6<IA;@=(' AFF ;@1 ?' ' C1=' FB= . (' ' C<' A 1I<;=A; ' 9' C<' <I 6B 1 ' 9' 8" ' C<' ; A6' F ;]?<' CA@' A6;<A@ ' A;;1I<@' A=' 9A;' A=' C<' (B6<IA;@' @B' <. G6<(' EC< ' =B@@< 6 ' A' K< ' 9' 96A . <(' 9 66 E<@' D ' A' 6 B@';<G ; (' 1==B<@' 9; .' A' <1?CD B;1 ?' C B=<'

' . ?=' C<=<' @<9< @<;=' E<;<' ; . A @' A;;<6(' @W' ; . < 1 (' @;W' @<' +B ?;AI<A11(' <;' @' ;?< = (' C<' ADDW' @<' A . < A1=(' A @' C<;=' EC .' =BD=<JB< ' <I< =' CAI<' ;< @<;<@' E<6' > E (' =BFC' A=' B?B= <' (6A JB1(' <@;B 661 (' (A=GA16(' ;W6A (' 6 F (' GG 61 <' ; B6(' A @' +1<;;<' <; BP

' ' EA=' =A1@(' C E<I<;(' CA ' C<' AFDB=<@' E B6@' C<' D; B?C ' 1 ' B; (' <1 C<;' ?< C<;' ;' =<GA;A <6 (' ' C<A;' C<' E1 <==<' A @' D<' C<A;@' 1 ' C<1;' @<9< F<

8 8* ^x ') 7 !

<I<; ' =1@<' 9 C<' - 1 ?' C<;<' A; =<' 9;1?C 9B6' F;1<=' C<' . A;FC' A @' C1=' = =' E<;<' =GA;<@' N DB ' C<' ?; B @' A; B @' C< . ' EA=' F I<;<@' E1 C' >166<@' A @' E B @<@1' ; 'G<;= =' E<;<' = ;BF>&' A @' <1?C << ' . ; A66 '1 KB;<@' N A;=CA63 ; 1<;&' %B><' 9' ;<I1= &' O< <;A6' TFCA=<' @<' W;1? &' E ' F 6 <6=&' =<I<;A6' A 1 A6' OBA;@=&' A @' A' B ?' ?1;6&' D<1 ?' A . ?=' CW" 6A <;' 'DA66' CA@' ?;AM<@' C<' - 1 ?3=' 9 ;<C<A@' N A C<;' CA@' G< < ;A <@' C<' F A ' 9' 61<' %B><' @<' (; ?61<N' A @' 91I<' ?< <;A6=' E<;<' A . ?=' C<)' E B @<@' B1=' +C161GG<' G;<=<; I<@' ' C1=' 91<6@' 9' FA; A?<' A66' C1=3 B=BA6' FA6 . <==&' A @' F 1 B<@' ' C1=' EA 'A . 1@=' C<' AFF6A . A 1 =' 9' C<' 1 @1? A 'F; E@' C<' 1 = ;B . < ' 9' C<' F;1 . <' EA=' A '1 9<; A6' . AFC1 <" A; . <@ E1 C' E< 91I<' DA; ;<6=' @1;<F <@' EA;@=' C<' D B6<IA;@&' A @' CA@' 5 D<< '1 I< <@' D ' A' ;=1FA ' A . <@' +1<=FC1&' C<' G;1 F1GA6' AB C ;' 9' C<' G6 ' <' EA=' =<1M<@&' ?< C<;' E1 C' C1=' AFF . G61F<=' A;F ' A @' +<G1 &' A @' ;1<@' D ' C<' B; ' 9' +<<;=' 66' 61;<<' E<;<' F @< . <@' ' @<A C&' AQ @ @1<@' BG ' C<' =FA99 6@

C1=' ?;<A ' F;1 . <' <PF1 <@' C B?C B ' +A;1=' A @' C<' EC 6<' 9' ;A F<' A' 9<<61 ?' 9' C ; ; ;' . 1 ?6<@' E1 C' BG<9AF 1 &' A @' 19' C<' O I<; . < ' CA@' C< ' F 91 <@' 1 =<69' ' C<' G; G =A6' 9' 6AE=' 9 ;' ?BA;A <<1 ?' C<' G<;= =' 9' C<' - 1 ?' A @' C<' . < . D<;=' 9' C<' ; A6' 9A . 16 ' 9; .' =1 . 16A;' A AF>=' 1 ' C<' 9B B;<&' C< ' E B6@' CA I<' D<< ';<F<1I<@' E1 C' ?< <;A6' AGG; DA 1 ' (B ' 1 ' _EA=' ' = ' ' 9<E' @A =' A9 <;' CW' = 6< . ' 9B <;A6' 9' C<' I1F 1 . =' C<' CA . D<;=' E<;<' F I ><@' a C' B?B= b&' A @' A9 <;' C<' A&g 9 <G < .' @<61I<; ' 9' A' 6B . 1 B=' A @' F =F1< 1 B=' <PG6A A 1 ' 9' C<1;' DK<F =' D ' C<' %B><' @<' (; ?61<&' C<' + ;<=1@< ' 9' C<' B F16&' C<' - <<G<;' 9' C<' <A6=' G;<=< <@' ' C<' @<GB 1<=' C<' @;A9 =' 9' C;<<' 6#1E=' _ ;<6A 1I<' ' C<' F B; =' 9' A==1M<&' KB;1<=&' A @' ' C<' G;<==' C<=<' 6AE=&' _ 1 ' C<' G1 1 ' 9' C<1;' AB C ;=&' E<;<' A66' 1 < @<@' 'G; <F ' C<' - 1 ?&' C1=' 9A . 16 &' A @' C<' <E' . A;FC ' A?A1 =' C<' CA ;<@' A @' 9B; ' 9' C<1;' < < . 1<=&' A @' = . <' 9' C<1;' F6AB=<=' < @<@' @1;<F 6 ' ' C1=' < @' C<' 6A <;' AD;1@?<@' C<' G; F<<@1 ?=' D<9 ;<' C<' F B; =' 9' A==1M<' N ?AI<' ?;<A <;' 1 @<G< @< F<' ' KB;1<=' D ' .<A =' 9' C<' 1 ; @BF 1 ' 9' C<' = = < .' 6 =<F;<' I 1 ?N' ;< @<;<@' C<' ;<G;<=< A 1 ' 9' @;A . A 1F' E ;>=' ;' C<' A6<' 9'@;AE1 ?=' A @' < ?;AI1 ?=' B 6A I9116' E1 C B 'A' O I<; . < '61F< F<' N G; C1D1 <@' C<' K B; A6=' 9; .' . A>1 ?' A ' A AF>' BG ' C<' G<;= =' 9' C<' - 1 ?' A @' C<' . < . D<;=' 9' C1=' 9A . 16 N' ;' C<' G;1 F1G6<' <I<' ' 9' C<' <= A ' D61=C<@' ? I<; . < &' A @' 1 F;<A=<@' C<' ;<=G =1D161 ' 9' C<' F @BF ;=' 9' C<' . ' (B ' ' C<=<' . <A=B;<=&' EC1FC' F1;FB . = A F<=' ;< @<;<@' ;<A= AD6<&

C< 0 I<; . < ' CA@' A@@<@' C<;=' 1 ' EC1FC' F B6@' D<' G<;F<1I<@' A' =G1;1 &
9' <P ;< . <' 1;;1 A 1 ' A?A1 =' C<' G<;1 @1FA6' G;<==' A @' . BFC' @1= ;B=' 9'
C<' G GB6A;' 1 = 1 B 1 ' 9' ;1A6' D 'KB; ' C< ' @1 . 1 1=C<@' 1 ' C<' F B; ='
9' A==1MG' C<' FCA F<' 9' AFJB1 A6' C1 C<; ' G ==<==<@' D ' C<' AFFB=<@'
@< . A @<@' < ; . B=' =<F ;1 1<=' 9; .' C<' K B; A6=' A @' =BDK<F <@' C< .'
' <P ;D1 A ' 91 <=' EC1FC' ;<FA66<@' 1 ' = . <' @<?;<<' C<' @1 B=' = = < .'
9' F 91=FA 1 ' AD 61=C<@' D ' C<' FCA; <;'N A @' 91 A66 ' 1 'F<; A1 ' FA=<=' 1 '
@1;<F ' GG =1 1 ' E1 C' C<' =1P 1 C' A; 1F6<' 9' C<' FCA; <;' ;< . I<@' C<'
F =1@<;A 1 ' 9' F;1 . <=' 9' C<' G;<==' 9; .' C<' F =1@<;A 1 ' 9' KB;1<='
D '< AD61 ?' C<' 0 I<; . < ' A ' 1 =' E166' ' @<F6A;< C< . " ' D<' B ;A?<='
A?A1 =' C<' ; E ' A @' CB=' FAB=<' C< .' ' D<' ;1<@' D ' C<' B;' 9'
+<<;=

' EA=' @1991FB6 ' ';<?A;@' C<=<' 6A <;' F6AB=<=' A=' 6 ?1FA6' F =<JB< F<='
9' C<' F;1 . <' F . . 1 <@' D ' 1<=FC1' A @' C< ' E<;<' ;<?A;@<@' ;A C<;' A='
G; K<F =' EC1FC' CA@' D<< '6 ?' F F<1I<@' A @' 9 ;' C<' G; @BF 1 ' 9' EC1FC'
C1= B ;A?<' EA=' 9A;' 6<==' A' FAB=<' CA ' A ' GG ; B 1 ' A @' A' G;< <P '
%<9< @<@' E1 C' A66' C<' EA; . C' 9' F I1F 1 ' A @' <6 JB< F<' D ' ' @<'
(; ?61<' 0B1M ' A @' C1<;=' C<=<' C;<<' G; K<F =' < F B <;<@' 1 ' C<
CA . D<;=' A' I<C< . < ' GG =1 1 ' C<' . =' 166B= ;1 B=' 1 <; '
1AE Y 9 <G . ' G;s <;' 9' EC1FC' EA= C<' 6@' A @' I< <;AD6<' FC1<9' 9' C<
@ F ;1 A1;<=' < ; 66A;@' EC ' =A@' A @' @1=F B;A?<@' A @'
<I< ' = B;<@' D ' ?1 <A ' @<F<G 1 =' CA@' =CB ' C1 . =<69' BG' 9 ;' . A ' <A;=' 1 '
A' . BFC D< ;<?;< <@' ;< 1;< . < ' 1=' D6<' 6A ?BA?<' EA=' A=' 1 ' A6EA ='
EA=' 1 =G1;<@' D ' A' C1?C' . ;A6' <' A6 C B?C' D6A . 1 ?' ' D1 <;6 ' G<;CAG='
C<' AF =' 9' C<' AD1 < ' A @' =G<A>1 ?' ' =61?C 1 ?6 ' 9' C<' <I16=' EC1FC'
CA@' =B??<= <@' C< . ' +; 9 B @' ;<?;< =' CB=' . 1 ?6<@' C< . =<6I<=' E1 C'
6<?1 1 . A <' E1=C<=' A @' C1=' EA=' C<' ;B<' <PG;<==1 ' 9' C<' 9<<61 ?' EC1FC'
D<?A ' ' G;<IA16' C<' ;A ;' ;< . 1 @<@' C1=' C<A;<;=' CA ' C<' ;<9<;< F<' 9'
1 < F<=' F . . 1 <@' D ' C<' G;<==' ' C<' KB@? . < ' 9' A' KB; ' CA@' D<< '
;<?A;@<@' A=' A' ?;<A ' A 1 A6' F JB<=' A @' ;<F ? 1=<@' A=' <= AD61=C<@' 9 ;'
<I<;' A9 <;' SB6 ' 8"' A @' C<' 9<A;<@' CA ' D ' ;< . I1 ?' C< .' 9; .' C<1;'
A B;A6' KB@?<=' ' ; ' C< .' D<9 ;<' C<' +<<;=' C<' AB C ;1 ' 9' CA ' CA . 0
D<;' E B6@' D<' . BFC' @1 . 1 1=C<@' N C< ' A;;1I1 ?' D ' @<?;<<=' A ' C<' . ;A6'
=1 BA 1 ' A ' C<' = A <' 9' GBD61F' 9<<61 ?' C<' =A1@') , [' C<' <I16' 1=' ?;<A ' '
L@@?M' 9' BK@70' A @' ' =CA66' ' A < . G ' ' @<=F;1D<' 1 N' DB ' 1=' 1 ' 9
A;f <= <;@A ' 6 ' A @' 1=' 1 ' < 1;<6 ' @B<' ' C<' 61F< F<' 9' C<
G;<==' ' ?;<A ' =FC 6' CA=' D<< ' G< <@' @B;1 ?' C<' 6A= ' 919 ' <A;=' A @

C1=' =FC 6' F =1= =' 9' C<' <I< =' EC1FC' CAI<' @B;1 ?' CA' 1 .<' A6 . ='
1 F<==A 6 ' A>< ' G6AF<' D<9 ;<' B;' < <=' <' B=' ;<I1<E' C< .')' C<' * C'
F D<;(' C<' " C' B?B=(' C<' =' SA BA;(' C<' 8 =' A(' C<' C'
;;#F 1@ ;(' C<' C' (;B . A1;<'N A @' C<;<' ' GAB=<' CA' @ ' E<' =<<' 1 '
C1=' =<;1<=' 9' ;<I 6B 1 =' c' 1F ; ' ?A1 <@' D ' 9 ;F<' I<;' C<' <= AD61=C<@'
;@<;' 9' C1 ?=(' ECA <I<;' 1 ' . 1?C ' D<(' A @' @ F ;1 <=' A6EA =' ;<A@ ' '
@<9< @' C1=' <' CAI<' D< <@' C<' ? I<; . < =' 1 . G =<@' D ' 9 ;F<'N E<'
CAI<' ;<F<1I<@' A @' F<6<D;A <@' 1 ' B; ' C<' F ;A; ' @ F ;1 <=' ' EC1FC'
C< ' E<;<' DA=<@' ' ' N ' @' 1 ' 1=' CB=' CA' AB C ;1 , C<' F;<A 1 ' 9'
+; I1@< F<(' EC1FC' CA=' 9 ; . <@' = F1< , #CA=' D<< ' G6BF><@' BG' D ' 1 =' ; =
A @' CA=' D<< ' GB;=B<@' A=' A' G;< ' ' D<' @<I B;<@' D ' 9 ;F< C<
;< . <@1<=' ' EC1FC' C<' +;<=1@< ' 9' C<' B F16' ;<61<=' A;<' C<' 166B=1 =' 9'
A' ? @' . A ' B @<;'1;;1 A 1 (' A;<' C<' AF =' 9' @<=GA1;(' A @' E166' 1 961F ' A' . ; A6'
B @' ' CA' 61D<; ' EC1FC' CA=' D<< ' GB;FCA=<@' A' C<' <PG< =<' 9' = '
. BFC' . 1=<; (' 16(' A @' D6 @' ' ;<K<F ' C<=<' 9A A6' ;< . <@1<=(' C<=<' 6<?1=6A0
1I<' . <A=B;<=(' EC1FC' A;<' ;<@ 6< ' 9' FB 1 ?(' C<' i= <;' 9' I1 6< F<(' A @'
9' A C<;' =FC 6' 9' 1 . . ;A61 ' <' B=' CAI<' . ;<' F 91@< F<' 1 ' C<'
F B ; 'N 6< ' B=' ?1I<' 1 ' @B<' C B;'N 6< ' B=' ;< . < . D<;' CA' 1 ' AD B @=' 1 '
C <= ' =< 1 . < =' N 6< ' B=' A@@;<=' B;=<6I<=' ' C =<' =< 1 . < =(' A @' C< '
E166' ;<=G @' ' B=' < ' B=' 'D<' FA @1@' A @' BG;1?C (= ;1F 6 ' KB=' A @'
KB@1F1 B=6 ' . <;F19B6' 9' CA' D<' A';<I 6B 1 ' C<' F B ; 'E166' D<' ?;A <9B6'
' B=' 9 ;' 1 (' A @' +; I1@< F<' E166' D6<=' B;'<99 ; = `
C<=<' E ;@=' 9' <; 66A;@' G; @BF<@' A' G; 9 B @' =< =A 1 (' A @' C<'
1 1= <;' 9' C<' <;1 ;' < @<AI B;<@' ';<9B <' C< .' D ' A;?B1 ?' CA' C<'
GBD61F' 61D<; 1<=' E B6@' D<' G; <F <@' A @' u ' C;<A < <@' D ' 6AE=' EC1FC'
B6@' G;<I<' ' C< .' 91' .' @<?< <;A 1 ?' 1 ' 61F< 1 B= <==' ' C1<;='
A=' < <;?< 1FA66 ';<G61<@' ' D ' C<' G;J?1@< ' 9' C<' CA . D<;(' ' %BG1 (
=< 1 ;(' A @' ' %B9AB;<' A @' @166 ' (A;; ' <I<; C<6<==(' C<' C;<<
G; K<F =' CAI1 ?' D<< ' A@ G <@' D ' CW' %<GB 1<=' A @' C< ' I <@' D ' C<'
+<<;=(' 1 ' =G1 <' 9' C<' <6 JB< ' <99 ; =' 9' ' 166< . A1 ' A @' @<'
A6< . D<; (' E<;<' F I<; <@' 1 ' 6AE=' EC1FC' CAI<' ;< . A1 <@' 9A . B='
@<;' C<' A . <' 9' C<' AE=' 9' <G < . D<;
=' ;<?A;@<@' 9; .' C<' G;<=< '@A ' C<' 9B; ' 9' C<' F ; I<;= 'G; @BF<@'
D ' C<=<' 6AE=' AGG<A;=' A= 1=C1 ?'N DB ' ' AGG;<F1A <' C< .' G; G<;6 (
A=' 1 ' C<' FA=<' 9' A66' 6AE=' F =1@<;<@' 9; .' A' @1= A F<(' E<' B?C ' '
I1<E' C< .' 1 ' A ' C<1;' D<A;1 ?=(' A @' EC< ' E<' 9 ; .' B;' KB@? . < '
G9' C< .' ' A><' FA;<' ' ' =<GA;A <' C< .' <1 C<;' 9; .' C<' <99<F =

EC1FC' C< ' G; @BF<@' ;' C<' F1;FB . = A F<=' 1 ' EC1FC' C< ' E<;<' <= I "
D61=C<@
' C<' 6AE=' 9' <G < . D<;' C<;<' ÆE<;<' K 1 <@' E1 C' = . <' E1=<' A @
5 <F<==A; ' < AF . < =' C<;=' 1 ' EC1FC(' 1 ' =G1 <' 9' 1 @1? A '
@+DO7#?A' B+' <J@'
6AE=' B3 @L<@ ; 0' @< 1A6=' CA ' 1 ' EA=' C<' FA=<(' C<;<' F B6@' D<' =<< ' A=' . BFC"
J@7
(;<=< . < ' A?A1 = ' A=' @1= ;B=' 9' A' 9;<<' G;<==' A @' ;1A6"
D ' KB; (' D C' 9' C< . ' 1 = 1 B 1 =' EC1FC(' CA@' D<< ' 6 ?' IAB <@' D "
C<' AB C ;=' 9' C<=<' ' <1 ' 6AE=' A=' C<' D<=' F = 1 B 1 A6' ?BA;A <<=' 9'
. @<; ' = F1< ' <' . A ' =A9<6 ' =A ' CA ' 1 ' C1=' ;<=G<F ' C< ' I<;0
= <GG<@' C<1;' DK<F (' A @' C<' <I< ' G; I<@' CA ' 1 ' EA=' 'F F< ;A 1 ?'
1 ' A' 9<E' G E<;9B6'K B; A6=(' D ' . <A =' 9' =<FB;1 1<=' A @' 91 <=(' A66' C<"
= ;< ? C' 9' C<' G<;1 @1FA6' G;<==(' CA ' 1 =' <PG6 =1I<' 9 ;F<' F B6@' D<'
. @<;A <@ ' C<' 6AE=' 9' <G < . D<;(' 1 ' 9AF (' A B F<@' A' @< <; . 1 A 1 "
' D<' GA; ' 9' C<' O I<; . < ' 'G<;=<I<;<' 1 ' A' F B;=<' D9' <I<;1 (' A @'
' ;< @<;' G<; . A < ' A' G 61F ' 9' 1 1 . 1@A 1 ' EC1FC(' 1 ' C<' G1 1 ' 9'
. A ' . < ' @<I <@" ' C<' A;FC (' F B6@' 'DB ' D<' ;A =1 ; ' C<'
1;;1 A 1 ' EC1FC' C< ' FAB=<@' EA=' . A 19<= <@' 1 ' C<' I <=' 9' . A ' 9' C<3
F B F16= ?< <;A6' 9' C<' @<GA; . < =' N 1 ' = ;< ? C< <@' C<' @1=A= ; B=' 61 >="
EC1FC' F <F <@' C<' @ A= 1F' <9 ' E1 C' C<' <P ;< . <' <9 (' A @' 1 F;<A=<@'
C<' EA 9' CA; . 'A . ?= ' C<' =<; IA 1I<=N' A @' A ' C<' =A . <' 1 . <'
C<=<' ;1? ; B=' 6<?1=6A 1I<' . <A=B;<=' @1@' ' = ;< ? C< ' C<' 1 1= ; "
;A F<' EA=(' 1 ' 1=' ;B<(' G<AF<AD6<' @B;1 ?' C<' 9 B;' . C=' EC1FC' 9 66 E<@'
C<1;' G; . B6?A 1 (' DB ' C1=' FA6 . " EA=' 6 ' C<' A B;A6' ;<=B6 ' 9' C<'
@<G;<==1 ' 9<6 ' D ' C<' ;<GBD61FA ' GA; 'A9 <;' = ' . A '@<9<A =(' A @' C<'
AD1 <' EA=' I<; 6 . E ' A ' C<' F . . < F< . < ' 9' C<' 9 66 E1 ?' =<==1 '
a 8*b
C16= ' C<' 6<F 1I<' CA . D<;' EA=' @1=FB==1 ?' C<' A@@;<=' 1 ' 3;<G6 ' '
C<' =G<<FC' 9; . ' C<' C; <(' C<' 1 A F<' 1 1= <;(' B . A (' 1 ; @BF<@'
1 D' C<' @1=FB==1 ' C<' 1 96A . . A ; ' JB<= 1 ' 9' C<' I<;=1 ' 9' C<'
< <=' E1 C ' CAI1 ?' F =B6 <@' C1=' F 66<A?B<=' C<' 6A <;' @<F6A;<@'
GK1 9' D< AD(A@I1=AD161 ' 9' C1=' F I<;=1 (A @' 1 . G;B@< 6
<(<D(#+' C<' @<F1=1 ' 9' C<' CA . D<;' ' C1=' =<;1 B=' ' BDK<F
A' JB<= 1 ' A=' ' C<11' 1 1= <;1A6' <P1= < F<' ' . AK ;1 ' 9' E ' EA='
A?A1 = ' C< . (A @' C< ' ?AI<' 1 ' C<1;' ;<=1? A 1
C1=' I <' EA=' ?< <;A66 ' ;<?A;@<@' A=' A' . 1= A><' C<' AD1 <' EC1FC'
;< 1;<@' CA@' @ BD 6<==' ' . A 'G 1 =' 9A16<@' ' =A 1=9 ' C<' <F<==1 1<=' A @'
6<?1 . A]' @< . A @=' 9' C<' F B ; ' ' @<=G<;A <' = ;B??6<' E1 C' 1 . G6A

FAD6< < . 1<= CA@ AD= ;D<@ C< ?;<A <;' G ; 1 ' 9 1 = 1 . < A @ = ;< ? CN A @ < (D ' 1 = F B;A?< B= < <;? (1 = B A 1 . 1 (A @ C< A6< = 9 1 = G;1 F1GA6 . < . D<;=(1 ' CA@ 1 =G1;<@ F 91@< F<(A @ ' C< A;;1IA6 9 A FA6 . <;' G<;1 @ . 1?C ' CA I < D<< ' AD6< ' 9< @<;' C<;' =<; I1F=' C< E<A> . AK ;1 ' EC1FC I<; C;<E 1 ' E1 C B ' D<1 ?' 1 =<69 FAGAD6< 9 9 ; . 1 ?' A AD1 < (=C E<@ CA ' 1 ' CA@ ' =B991F1< 6 ' FA6FB6A <@ C< F =<JB< F<= 9 1 = I <N A @ CB=(9; .' A ' 1 F1@< ' 9 I<; ' = . A66 =1? 191FA F< 1 ' 1 =<69(A; =< =<;1 B= A @ B <PG<F <@ F =<JB< F<=(A @ C< 9A66 9 C< AD1 < ' . A;><@ C< F6 =< 9 CA ' G 61F ' 9 B 1 ' A @ . B BA6 =BGG ; ' EC1FC EA= 1 AB?B;A <@ ' C< C F D<;(8 (D ' C< F . D1 A 1 ' 9 C< IA;1 B= G ; 1 = 9 C< ?;<A ' =<; IA 1I< GA; ' A?A1 =' C< A@ I<;=A;1<= <1 6#<P 9 C< . A;FC1FA6 1 = 1 B 1 = ;' 9 C< . A;FC ' 1 =<69

ADA @ ' C<1;' G;1 F1G6<=& A @' A ' C1=' G;1F<' 6 ' F B6@' C<' =<FB;<' CA ' =BGG ; ' 9; .' C< . ' EC1FC' C<' F =1@<;<@' 1 @1=G< =AD6<' ' C1=' . A1 < A F<' 9' G E<;' ' C<' F . . < F< . < ' 9' C<1;' 9B F 1 =' D ' C<' <E' AD1 < & C<'&+ ;<=1@< &' 1 ' C<' F B;=<' 9' A' @<DA < ' C<' =<F;< ' =<; I1F<' . < & . A@<' A ' <PG61F1 ' @<F6A;A 1 ' CA ' C<;<' F B6@' D<' ' A6 <;A 1 '1 ' C<' F @BF ' 9' C<' O I<; . < & A @' CA ' 1 ' = 166' A@C<;<@' ' C<' G 61F ' 9' ;<=1= A F<' ' F F<==1 ' EA=' . A@<' D ' C1 .' ' C<' . ;<' F F161A ; ' I1<E=' 9' C1=' F 66<A?B<=' 9' C<' C1;@' +A; & EC =<' 1 96B< F<' 1 ' C<' AD1 <' EA=' F 0 91 <@' ' G; FB;1 ?' 9 ;' 1 ' C<' =BGG ; ' 9' C<' I <=' 9' C<1;' 9;1< @=' ;' GA; 1=A =

C1=' 1 1= ; ' 6A= <@' A' = 166' =C ; <;' 1 . <' CA ' C<' G;<F<@1 ?' <& A @& A . ?= ' C<' = . A66' B . D<;' 9' . <A=B;<=' FA; ;1<@' 1 ' <P<FB 1 ' @B;1 ?' 1 =' A@ . 1 1= ;A 1 & E<' =C B6@' . < 1 ' <' B=<9B6' 6AE' 9 ;' 9AF161 A 1 ?' C<' F = ;BF 1 ' 9' -^ ' - f!' A @' A' G;A1=<E ; C ' =AF;191F<' . A@<' GBD61F' . ;A61 ' 9' A' ;<I< B<' 9' AD B ' =1P' . 1661 =' D ' C<' =BGG;<==1 ' 9' ?A . 1 ?' ¸C B=<= Y' ' 9;<=C' G; K<F ' 9' A' 6AE' ;<6A 1 ?'

1 1= <;1A6' ;<=G =1D161 ' EA=' G;<=< <@' D ' C<' AD1 <' ' @ $A#><$G@ @+>B< ; @+<A

C<' CA . D<;' 9' +<<;=' DB ' 1 ' =B99<;<@' C<' 9A <' 9' C<' G;<0 F<@1 ?' G; K<F =' ' C1=' =BDK<F ' A @' 9A16<@' ' 6<AI<' C<' A;FC1I<=' 9' C<' CA . D<;' C<' =<==1 ' EA=' D; B?C ' ' A' F6 =<' 1 ' SC <& 8*& A @' A' 9<E' @A =' A9 <;EA;@=' C<' - 1 ?' G; I1@< 1A66 ' <=FAG<@' A C<;' PC<'><<@ ; L<' 9' A AF>' . A@<' A?A1 = ' C1=' G<;= ' C<' AB C ;' 9' C1=' F;1 . <' EA=' A' B ?' 9A A 1F' A . <@' 61DAB@& EC & D<1 ?' ;1<@' A @' F @< . <@' D ' C<' B; ' 9' +<<;=& 6 = ' C1=' C<A@' BG ' C<' =FA99 6@

;A JB1661 ' E' D<?A ' ' D<' ;< <= AD61=C<@' 1 ' C<' 1 <;1 ;& DB ' C<' G 61 1FA6' e ;1M ' EA=' ?6 . ' AD; A@' C<' 6A= ' ;< . A1 =' 9' C<' A F1< ' 1 @<G< @< F<' 9' + 6A @' G<;1=C<@' E1 C' C<' ;<GBD61F' 9' ;AF E' C<' E ' G E<;=' 9' C<' ; C' A @' B= ;1A& B @<;' >#' B3' 7>?BS C<' G;< < F<' 9' = 1661 ?' A @' @<= ; 1 ?' A' 9 FB=' 9' G 61 1FA6' ; BD6<=& >' G ==<==1 ' 9' ;AF E& A @' ;A F<' G; <= <@' 9<<D6 ' A?A1 = ' C1=' 1 9;AF 1 ' 9' C<' F6AB=<' 9' C<' ;<A 1<=' 9' 7& D ' EC1FC' C<' 1 @<G< @< F<' 9' ;AF E' EA=' ?BA;A <<@' D ' A66' B; G<

E1 M<;6A @' A ' C1=' 1 . <' AGG<A;<@' A ' A= 6B .' ' C<' ;<I 6B 1 1= =' A @

4' B<<@7$@A' M>C' >#7@>CK' J@@+' >JB#$AM@C' D+C@7' <J&' L7@?@C$+ ') $+$A<7K ' 7>3<A' B3' #>SA' 7@#><$+ ' <B' <M@' 7@ALB+A$J$#$<K' B3') $+$A<@7A' M>C' >#7@>CK' J@@+' L7@A@+<@C' <B' <M@' @LD<$@A' $+' , 2 ' , 22' >+C' , 2.' MD<' +B+@' B3' <M@ ;' M>C' J@@+' FF<G <@

A @' = . <' GA 1=C' A @' + ; B?B<=<' ;<?1 . < =&' E B6@' 9 ; .' C<' F6< 1=' 9' A ' 1 . G =1 ?' - 5[' $ / ' B1=' +C161GG<' =A F 1 <@' C1=' G; K<F &' DB ' D<9 ;<' 1 'EA=' FA; ;1<@' 1 ' <P<FB 1 &' A' . 161 A; ' 1 =B; ;<F 1 ' DB;= ' 9 ; C&' 1 ' C<&' . C' 9' B?B= &' 1 ' GA1 ' C<' L11<< <?< &' D<=1<?<@' E1 C' C<;' @AB?C <;&' C<" LB<< ' =AD<66A&' 1 ' C<' GA6AF<' Z9' A' O ;A KA' D K' A' 9B;1 B=' = 6@1<; &' EA=' F . G<66<@' ' =BD=F;1D<' ' C<' F = 1 B 1 ' 9' &' 1 ' EC1FC' ; A6 ' EA=' A' . <;<' GCA . ' A@;1@' ; =<' 1 ' 1 =' B; &' A @' EA=' C<' C<A ;<' 9' C ; ;1D6<' =F< <=' O< <;A6' LB<=A@A' G<;1=C<@&' ; ' 1 ' G1<F<=' D ' CA ' G GB6AF<&' A @' = B;1 <' EA=' GB=C<@' 9; .' G E<;' ' C1=' <E' F;1=1=&' B1=' +C161GG<' ;<9B=<@' ' A1@' A' ? I<; . < ' EC1FC' CA@' 9A66< ' 1 ' C<' CA @=' 9' A' ;<IZ6B 1 A; ' @< . A? ?1= . &' A @' E1=C<@' C<' I 6B <<;=' 1 F ;G ;A <@' 1 ' C ' ;<1? &' <?1 ' ' D<' @1= . 1==<@'N EC16= ' ' C1<;=' 1 =1= <@' CA ' C< ' =C B6@' D<' ;< A1 <@' A ' C<1;' 96A?=&' ' D<' %1= . 1=A6 9' ' ;<A@ ' ' AF ' EC< ' ;@<;' =C B6@' D<' ;< <= AD61=C<@ ' =' C1=' I1<E=' E<;<' @1;<F 6 ' GG =<@' D ' C<' - 1 ?' C<' ;<=1? <@' C1=' G ; 9 61 'N A66' C1=' F 66<A?B<=&' E1 C' C<' < PF<G 1 ' 9' ' A61I< &' 9 66 E<@' C1=' <PA . G6<&' A @' C<' 1 1= ; ' EA=' @1== 6I<@

C<' 9 ; . A 1 ' 9' A' <E' 1 1= ; ' EA=' E' < ;B= <@' ' A ' < . 1 < ' 1; < . D<;' 9' C<' G<<;A?<&' ' 6W' ; . <;6 ' A&C1?C' 9B F 1 A; ' 9' C<' . G1;<&' A' = A <= . A ' A @' A&' F B; 1<;&' ' 6W' EA=' <' 9' C<' = . A66' B . D<;' 9' C<' <E' . A;FC ' EC ' E<;<' =BG<;1 ;' C1?C' 991F<=N' 19' ' A6EA =' D ' ;<A= ' 9' C<1;' G<;= A6') $+$ <$K'B3') 5FCA;AF <;&' A ' 6<A= ' D ' C<1;' ;A >&' AB@' 9 ; 1 . 1' <&EA=' A' 9;1< @' 9' C<' -61 ?&' DB ' <I<; C<6<==' C<' @1@' ' FA; ; ' C1=' @<9<;< F<' 9 ;' C<' ; A6' E1=C<=&= ' 9A;' A=' ' =AF;191F<' ' C< . ' C1=' G<;= A6' F I1F 1 =&' ;' C<' 1 <;<= =' 9' C<' F B ; ' =' 1 1= <;' 9 ;' ;<1? ' 99A1;=' 1 ' 8"&' A ' _C<' G<;1 @' 9' C<' (<6?1A ' ;<I 6B 1 &' C<' G;<=<; I<@' (<6?1B . ' 9; .' A' '+;B==1A ' 1 IA=1 'N A @&' D ' D<1 ?' C<' 91;=' ' G; F6A1 . ' C<' G;1 F1G6<' 9' _ 1 <; I< 1 &' CA@' @1=G6A <@' A' F6<A;' =< =<' 9' ECA ' F1;FB . = A F<=' @< . 1 @<@&' A @' 9' C<' A 1 A6' E166 ' ' 6W' K 1 <@' ' =>166' 1 ' C<' F @BF ' 9' 1 . G ; A ' A99A1;=' C<" A; ' 9' . A A?1 ?' . < N' A @&' E1 C 11 ' G ==<==1 ?' ?;<A ' GA;61A . < A; ' <6 JB< F<&' EA=' 1 ' C1=' . A <;' F6<A;&' 9AF16<' =1 BA 1 ?&' A @' = . < 1 . <=' FB 1 ? &' ' =<; IA 1I<' D ' G =1 1 ' A @' C ' G;1 F1G6<&' C<' CA@' C1 C<; ' ;< . A1 <@' A AFC<@' ' C<' G 61F ' 9' ;<=1=0 A F<&' E1 C B &' C E<I<;&' CA I1 ?' 9 ; . <@' A ' I1 6< ' ;<= 6B 1 ' ' ;<. A1 ' ' <' C B?C ' CA ' C<' D<= ' =G<F1<=' 9' G 61F ' EA=' ' EA FC' C<' 1 . <=&' A @' ' ;<?B6A <' C1=' F @BF ' AFF ;@1 ?' ' F1;FB . = A F<=' <' @1@'

F =1@<;' CA ' C< . . < ' EA=' F . < A=' < ' 9 ;' . A>1 ?' A ' FCA ?<' 1 ' C< = = < . ' EC< ' C< ;<=B . <@' 1 ' 8*' C< 1 1= ; ' 9 ;' ;<1? ' 99A1;=& E1 C' C< 1 6< 9' +;<=1@< ' 9' C< B F16& A @' A=& A6 C B?C' C< CA@' ' # = . GA C ' E1 C' C< @ F ;1 A1;<=& C<1;' =BGG ; ' AGG<A;<@' ' C1 . ' ' D< 1 @1=G< =AD6<& C< . A@<' C;<<' 9' C< . ' . < . D<;=' 9' C1=' AD1 < & ' OB1M ' CA@' C< G ; 9 61 ' 9' +BD61F' = ;BF 1 & ' @<' OA=GA;1 ' CA ' 9' C< <;1 ;& A @' ' %BFCA <6& CA ' 9' 1 A F< Y

C< <P1= < F< 9' C1=' AD1 < ' EA=' A' I<; ' A?1 A <@' <' C< ;<6A 1 =' &D< E<< ' ;A F< A @' E1 M<;6A @' D<FA . < < . D1 <;<@& A @' C< ;1 A 1 ' _ &&&' 9' C< FA =' EA=' 1 F;<A=<@& ' E1 C B ' FAB=<& e ' C< B+A@$#' @1=F I<; ' 9' A' ;< FC' =G & A . <@' =<16& A' =<F;< ' A?< ' 9 C< 6A < AD1 < & EC ' EA=' @1=F I<;<@' A @' D1 <;6 ' @< B F<@' D ' C< %1< & A=' C< AD< ;' 9' @1= B;DA F<=' A @' C< G; . <;' 9' @< . A? ?1F' <PF<==<=& A ' C< I<; ' . . < ' EC< ' 1 ' EA=' ;<F<1I1 ?' 9; .' C< ;< FC' 0 I<; . < '1 . G<;1 B=' 1 KB F 1 =' '<PG<6& A66' @< . A? ?B<=' A @' A A;FC1= =' '_

C< =<;1 B=' @1=F < =' FAB=<@' 1 ' E1 M<;6A @' A @' C< F 1?B B=' ;< FC' @<GA; . < =' D ' C =<' 1;;1 A 1 ?' <? 1A 1 =& G;<F1G1 A <@& G; 0 DAD6 & C< <P<FB 1 ' 9' A' G6 & C< AB C ;' 9' EC1FC' EA=' +;1 F< B1=' AG 6< ' (AGA; <& = ' 9' C< <P - 1 ?' 9' 66A @& A @' =BD=<JB< 6 ' =B . . <@' ' =BFC' C1?C' @<= 1 1<=' C1=' G;1 F<& EC ' CA@' D<< ' D; B?C ' BG' 1 ' E1 M<;6A @' A ' C< FA= 6< 9' ;< < D<;?' D ' C< LB<< ' ; < =<& C1=' . C<;& CA@' A== F1A <@' C1 . =<69' 1 ' 8 & EC16= ' = 166& I<; ' B ?& E1 C' C< @1=A= ; B=' < <;G;1=<' 9' C< A61A ' GA ;1 =& A @' CA@' A9 <; ' +i+?@' J ; A& A;@=' . A@<' C1 . =<69' > E ' D ' = . < I ;>=' ' G 61 1F=' A @ ;A=DB;?XY#' C< A; ' 9' EA; ' 1 F< C<' @<A C' *9' C<' %B><' 9' <1FC= A@ ' ?<BJ@7' , 2 ' a AG 6< ' b& EC1FC' >' G6AF<' 1 ' 8 & N' . 4=' AG 6< < (AGA; <' F =1@<;<@' C1 . =<69' C<1;' ' C1=' 1 . F6<'=' 1 . G<;1A6' C; <& A @' @1@ ' @ BD ' CA ' C< =C B6@' = . < @A ' =1 ' '1 ' %<F<1I<@' D ' C< G<;G< BA6 ;1=1 ?=' 9' C< <GBD61FA ' GA; & A @' C< I1;B6< ' @<F6A . A 1 =' 9' C< GG =1 1 ' K B; A6=& A @' =<@BF<@' A6= ' D ' C< =<F;< ' < F B;A?< . < =' 4 9' IA;1 B=' 1 96B< 1A6' G<;= A& C< D<61<I<@' CA ' ;A F< EA=' ;<A@ ' =BD= 1 B <' A ' 1 . G<;1A6' ? I<; . < ' 9 ;' CA ' 9' SB6 & A @' CA ' C< E B6@ 6 'CAI<' 'AGG<A;& ' =<FB;<' A' 9 ; ;<=' A @' A' 9<E' ;<?1 . < =& A @' ' . A;FC ' +A;1=& ' D< =A6B <@' . G<; ;' D ' C< EC 6< 9' ;A F<' <' FA=' C1=

< <=' BG ' ;A=DB;?(' A @' ?A1 <@' I<;' 6 <6' AB@;< (' F . . A @<;' 9' C<' B; C' <?1 . < ' 9' ; 166<; (' A @' = . <' =BDA6 <; ' 991F<;=' 9' C<' ?A;;1= ' %B;1 ?' C<' 1?C ' 9' C<' 8" C' F D<;' C<' G;1 F<' =<F;< 6 ' < <;<@' C<' F1 (' ?A 61<;<@' ?< C<;' C1 ' AFF . G61F<=(' EA=' ;<F<1I<@' A=' . G<; ;' D ' 6 <6' AB@;< 3=' ;<?1 . < (' D ' ;@<;' 9'1 =' F . . A @<;(' A;1@ < @<AI B;<@' ' ;A1=<' A66' C<' ; G=' A @' C<' 1 CAD1 A =' <' C<' F; ' 9' $$L ' ' 2' L ' ' @ 24' C<' A < . G (' C E<I<;(' G; I<@' A' 9A16B;<(' 9 ;' C<' ?A;;1= ' A @' C<' 1 CAD1 A =' G; I<@' 9A1 C9B6' ' ' C<' - 1 ?(' A @(' A9 <;' A' =C ; ' = ;B??6<(' C<' G;1 F<' A @' C<' G;1 F1GA6' F 0 =G1;A ;=' E<;<' . A@<' G;1= <;=' C<' 6A <;' E<;<' ?1I< ' I<;' ' C<' CA @=' 9' KB= 1F<' N_ DB ' B1=' AG 6< (' C<' AB C ;' A @' EC 6<' = B6' 9' C<' G6 (' EA=' =< ' A ' 61D<; (' A=' CA@' 9 ; . <;6 ' D<< ' C<' %BFC<=='' @<' '(<;;1(' ' C<' ?;<A ' @1=F < ' 9' A66' C =<' ' EC .' <JBA61 ' D<9 ;<' C<' 6AE' AGG<A;=' 9' C<' C1?C<= ' 1 . G ; A F<' CB=' < @<@' C1=' ;A=C' < <;G;1=<N' DB ' <I<;0 C<6<==' 1 ' EA=' ' E1 C B ' = . <' 1 . G ; A ' ;<=B6 =' 9 ;' 1 =' AB C ;(' 9 ;' 1 ' =<1M<@' C 6@' 9' . < 3=' 1 . A?1 A 1 =(' A @' D ' 1 =' I<; ' ;A=C <==' @;<E' BG ' C<' G;1 F<' A @' C1=' G;< < =1 =' C<' A < 1 ' 9' ;A F<

C<' ;< FC' A; . =' A ' C1=' G<;1 @' <PG<;1< F<@' A' ?;<A ' @1=A= <;' 1;1 9;1FA(' EC<;<' A;=CA6' 6AB=<6' CA@' ;<F< 6 ' =BFF<<@<@' 1 . ' @3 ;6 ' A= 0 I<; ; 0< <;A6' 9' 6?<;1A ' C<' EA;' EA=' FA;;1<@' # @7$I E1 C' C<' B . =' I1? B;' @B;1 ?' C<' EC 6<' 9' C<' 6@

<?< F 'N A @' EC16=' D@ <6 - A@<;(' C<' . 1;' 9' A=>A;A(' EC ' EA= F =1@<;<@' D ' C<' ;AD=' A=' C<' 6<A@<;' 9' C<' 6 ' A;(' C<6@' B;' ; G= 1 ' FC<F>' 1 ' C<' G; I1 F<' 9' ;A (' C< ' CA@' ' ;<GB6=<' 1 ' C<' <A= (' 1 ' 61< G; I1 F<' 9' (A(' C<' F 1 BA6' A @' . B;@<; B=' A AF>=' 9' C<' (< ' 9 = A 1 <' C<' FAG B;<' 9' C1=' 6A <;' G6AF<(' EC1FC' EA=' <=G<F1A66 9 ; . 1@AD6<' 9; .' C<' = ;< ? C' 9' 1 =' G =1 1 (' EC1FC' EA=' A6 . = ' ' C< <@?<' 9' A' ; F>(' EA=' F =1@<;<@' D ' A;=CA6' 6AB=<6' A=' 1 @1=G< =AD6<' C<' =<FB;1 ' A=' E<66' A=' ' C<' @<I<6 G . < ' 9' C<' ;< FC' G ==<==1 =' 1 9;1FA ' ' F =1@<;AD6<' ;<1 9 ;F< . < ' 9' ; G=' CA@' D<< ' G; . 1=<@' 9 ; C1=' <PG<@1 1 ' D ' C<' G;<I1 B=' 1 1= ; (' DB ' EA=' ;<9B=<@' D ' C<' <E <' C<' A;=CA6(' C E<I<;(' A66 E<@' C1 . =<69' ' D<' G<;=BA@<@' CA ' C< ;A ' 9' FC . < ' (< ' 9' = A 1 <(' CA@' E<A;1<@' C<' 1 CAD1 A =(A @' CA ' A ' C<' AGG; AFC' 9' C<' ;< FC' A; . ' C<' F1 ' E B6@' D<' @<61I<;<@ ;1G' D ' C<' ;AD=' C< . =<6I<=' <' F =1@<;<@(' C<;<9 ;<(' CA

<' ; G=' EC1FC' C<' CA@' A ' C1=' @1=G =A6' E<;<' =B991F1< (' <$B@' @NL@C$<$B+ A @' G;<GA;<@' ' . A;FC' BG ' = A 1 <' E1 C' """" 1

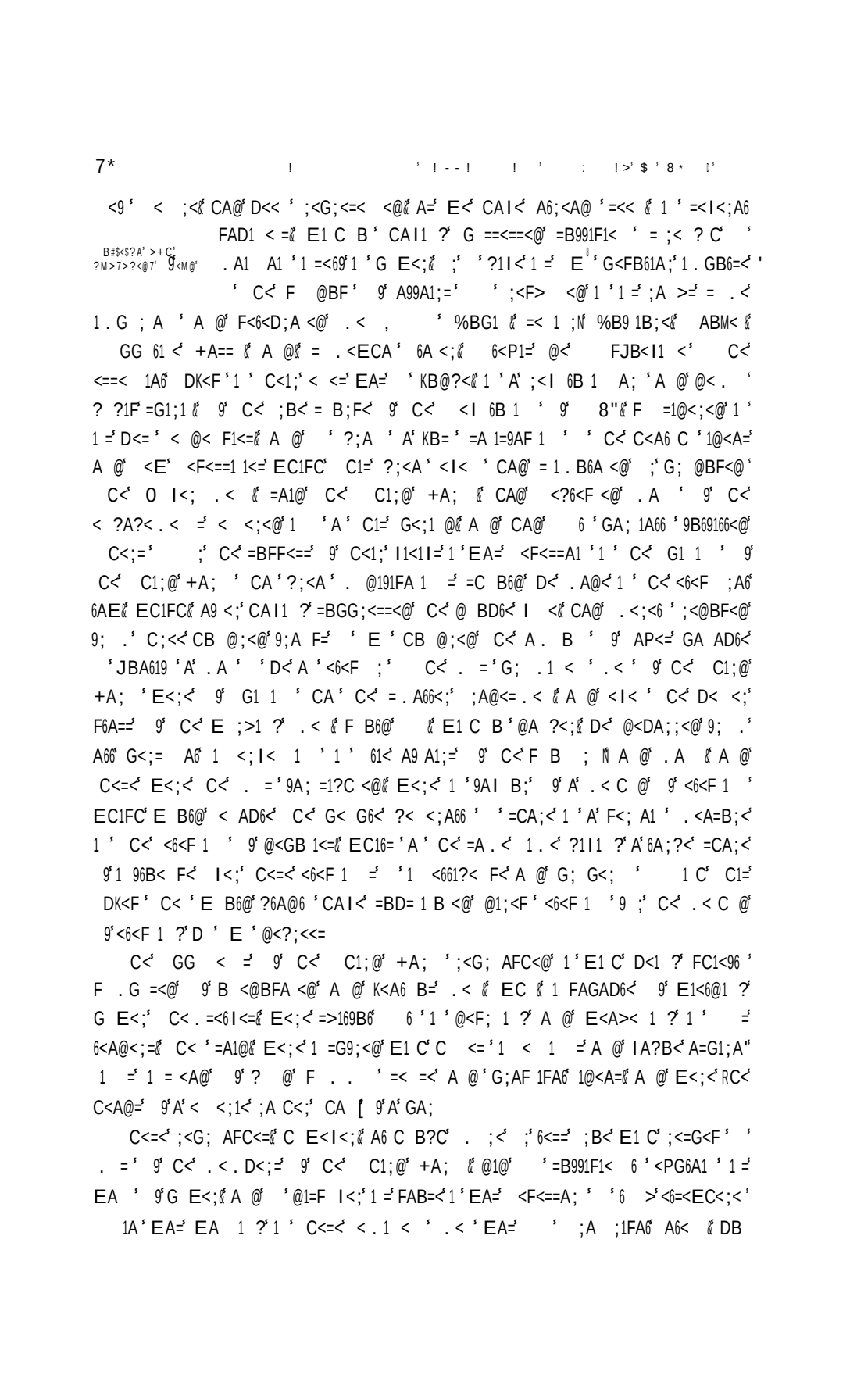
B+A< ; 0
2

. 8W " ' ! ' 8 ! > - ! ' : ! ! >' $ ' 8 * -

_9A C ⁄ 7" "' C ;=<⁄ E ' DA <;1<=' 9' C E1 M<;=⁄ A @' <1?C ' 91<6@' G1<F<=' C1=' E<A>' F ;G=' F . . < F<@' C<' FA . GA1? ' ' C<' 8 C' I< . D<;⁄ B @<;' C<' F . . A @' 9' A;=CA6' 6AB=<6⁄ EC .' C<' %B><' @<' < . B;=⁄ C<' - 1 ?3=' =<F @' = ⁄ AFF . GA 1<@' A=' A' I 6B <<;' C<' . A;FC' 9; .' (A' ' = A 1 <⁄ AF; ==' A' C = 16<' A @' 1 =1B ?< ' F B ; ⁄ EA=' A' I<; ' GA1 9B6' <ℕ 9<I<;⁄ 9A 1?B<⁄ A @' ;AD' E<AG =' @<F1 . A <@' C<' 61 6<' ;< FC' A; . ⁄ A @' = A 1 <' @1@' ' G< '⁄1 =' ?A <=' ' FAG B;<' 1 ⁄ 1 ' E B6@' D<' <F<==A; ' ' D<=1<?<' 1 ⁄ A @' A=' A' ;<?B6A;' A AF>' E1 C B ' =1<?<' G1<F<=' EA=' 1 . G ==1D6<⁄ C<' A;=CA6' A < . G <@' B =BFF<==9B66 ' C<' D 6@' G6A ' ⁄ 9' A ' A==AB6 ' ' ;< ;<A ' CA@' A6;<A@ ' D<F . <' @1991FB6 19; 1 ' C<' E# ' 9' G; I1=1 =' A @' A . . B 1 1 ℕ C<' A;=CA6' ;@<;<@' <ℕ A @' 1 ' EA=' @1=0 A= ; B= Y' ' 6< ? C' C<' A; . ⁄ A9 <;' CAI1 ?' < @B;<@' ?;<A ' =B99<;1 ?=⁄ ;<< <;<@' (A⁄ C ; B?C6 ' <PCAB= <@⁄⁄ A @' @1 . 1 1=C<@' D ' < C1;@⁄ CAI1 ?' 6 = ' C;<<' C B=A @' 1 < ' A @' A' ?;<A ' G ; 1 ' 9' 1 =' EA;' . A <;1A6 C<' <?1=6A 1I<' <==1 ' G< <@' ⁄1B' %<F< . D<;⁄ 8*⁄ B @<;' C<' GA1 91 ' 1 . G;<==1 ' FAB=<@' D ' C1=⁄ ;<I<;=<⁄ A @' D ' A' 9;<=C' A < . G ' A?A1 =' C<' - 1 ?3=⁄ 619< 9 ' C<' A@@;<=' G9' C<' EG' CA . D<;=' 1 ' ;<G6 ' ' F 1 6'16=<' C<' =G<<FC' 9; .' C<' C; <' CA@' =FA;F<6 ' D<< ' I <@⁄ EC< , 25I C<;<⁄ A;;1I<@' <E=' 9' C<' = ;A ?< ;<=B6 ' 9' C<⁄ ;1A6' 9' 6 <6' AB@;< ' A @' C<' C<;' AFF . G F<A' 9' ;1 F<' B1=' AG 6< ' A ' ;A=DB;?' C< ' E<;<' AFJB1 <@' ' C<' G;< <P ' CA ' C<' G;1 F1GA6' G<;= ' AFFB=<@' CA@' D<< ' E1 C@;AE ⁄9; .' C1=' KB@?<=' A @' C<' I<;@1F ' 9' C<' KB; ' ' C1=' B <PG<F <@' ;<=B6 ' C<' 1 1= ; ' ;<G61<@' D ' A ' AF ' 9' ;A?<' A @' 9;<=C' ;1? B;=' ' G;<=< <@' A⁄ 6AE⁄ FA <@' C<' 6A1 ' 9' @1=KB F 1 =⁄ ?; # @1 C<' C<)' <99<F ' 9' EC1FC' EA=' '#1=K 1 ' 9 ;' C<' 9B B;<' C<' ;1A6=' 9C$ARD+?<$B+ ' 9' F1I1 A ' G;1= <;#'9; .' C<' ;1A6=' 9' . 161 A; ' G;1= <;=' EC ' =C 1@@' D<' AFFB=<@' ⁄ 9' CAI1 ?' D<< 'F F<; <@' 1 ' C<' =A . <' F;1 . <⁄ C<' 6A <;' D<1 ?' CA @<@' I<;' G' . 161 A; ' ;1DB A6=' E ' C<;' 6AE=' E<;<' G;<=< <@⁄ C<' <' 9 ;' GB 1=C1 ?' E1 C' = 61 A; ' F 91 < . < ' C<' ;<I<6A 1 ' 9 ' G6 =' A?A1 =' C<' =A9< ' 9' C<' A <⁄ A @' C<' C<;' 9 ' 1 F;<A=1 ?' C<' GB 1=C . < ' 9' ;A =G ; A 1 ' D ' FCA ?1 ?' 1 ⁄ A ' C<' E166' 9' C<' O I<; . < ⁄ 1 ' CA ' 9'= 61 A; ' F 91 < . < ℕ 6A @' A ' C<' =A . <' 1 . F1' C ' A ' 9 ; B A <' F 1 F1@< F<⁄ C<' S 1 1= <;=' @< . A @<@⁄ 9' C<' CA . D<;=

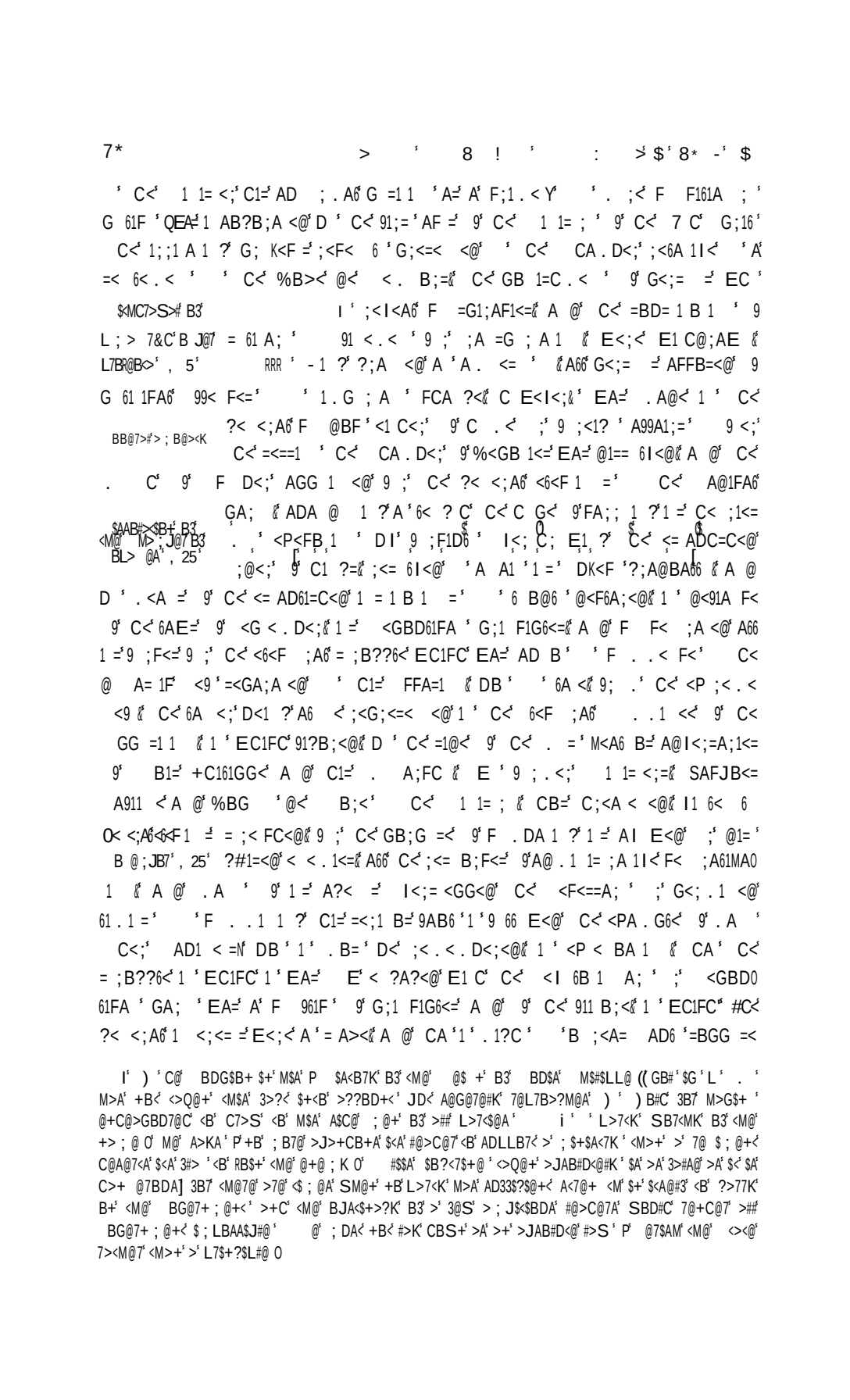
' . . A @A ' CA ?A; 1<;' F I<;<@' C1 . =<69' E1 C' ?6 ; ' 1 ' C<' F B;=<' 9' C1=' ;< ;<A⁄ EC1FC' C<' G; <F <@' A ' C<' C<A@' 9' A ' C<; 1F' DA A61 ' 9' C<' @ 61?C ' 1 9A ; ⁄ EC1FC' 9 1 . <@' C<' ;<A;'?BA;@

9' C<' A==A==1 3=' A . <' EA=' <B 1 ;' C<' -1 ?' 9 ;?AI<' C1 .



C< A66 G E<13B6 1 96B< F< 9 +A;61A . < A; '<6 JB< F<8 EC1FC 9A=F1 A <=8 =BDKB?A <=8 A @ < ;A F<=8 A @ EC1FC EA= G ==<==<@ 1 '=BFC C1?C G<;9<F0 1 ' D ' C< 6<A@<;= 9 C< +A; ' 9 <=1= A F<N CA ' @< <; . 1 <@ A @ A;@< ' A . D1 1 ' EC1FC 1= 6<==' FA;<9B6 ' 9 C< . <A = CA ' C< < @N CA ' F =B . . A < AD161 ' 'F;<A <8 ? I<; 8 A @ @1=F1G61 < A GA; 8 '1 96B< F< . < 'A= E<66 C; B?C C<1;' DA@ A= C<1;' ? @ 1 = 1 F =8 A @ '1 =G1;< C< . ' _E1 C F 91@< F< D ' . <A = 9 C< F 91@< F< EC1FC < CA=1 ' <3= =<69 ' C< FC1<9= 9 C< C1;@ +A; ' E<;< 1 <66<F BA68 DB ' 1 . 1@N C< ' E<;< A6 . = ' A6EA = 1 =G1;<@ D ' A ?< B1 < @<=1;< ' 9B; C<;' C< G GB6A;' 1 <;<= =8 DB ' E<;< A ' C< =A . < 1 . < F = A 6 ' C<6@ 1 ' FC<F> D ' C<1;' @<I 1 ' ' C< <E A;FC ' 'CAI< < AD6<@ C< . ' '9 ; . 'A G E<;0 9B6 C . ?< < B= GA; 8 FAGAD6< 9 FA;; 1 ? B ' D 6@ . <A=B;<=8 A F6 =< A661A F< . B= ' CAI< D<< ' <F<==A; ' D< E<< ' C< . ' A @ C< @ A= 1F <9 8 IC =< I1<E= 1 ' . A ' ;<=G<F = ;<=<. D6<@ C<1;' E 8 DB ' EC =< A <0 F<@< =8 A@I< B; B= < @< F1<=8 A @ @A ?<; B= F <P1 = E1 C C< A@1FA6 ;' <GBD61FA ' <9 ' E<;< ' B ;<A= AD6 ' C<6@ D ' C< C1;@ +A; ' 1 ' F =1@<;AD6< =B=G1F1 ' C< C1;@ +A; 8 . ;< I<;8 @1@ ' @1==1 . B6A < 1 = 1 < 1 ' 9 . @19 1 ? C< <6<F ;A6 6AE 1 ' =BFC A . A <;' A= ' <91<F ' I<; ' ?;<A ' A6 <;A 1 = 1 ' C< F . G =1 1 ' 9 C< 6<F 1I< CA . D<;'N A @ C1= A6 < EA= =B6 (F1< ' ' @<G;1I< C< . ' 9 . A 'I <= 1 'A CA . D<;' 1 ' EC1FC =<691=C G<;= A6 I1<E= D<FA . < . ;< A @ . ;< G ;<0 @ . 1 A 8 A @ 1 ' EC1FC ' . A ' 9 C< =BD ;@1 A < . < . D<;= CA@ A6;<A@ ' D<?B ' '@1=;<?A;@ C< ?< <;A6 1 <;<= = 1 '9A I B;' 9 C<1;' G<;= A6 <= C< 1 1= ; ' 9 ' 6* @1@ ' ;<F> ' A . ?= ' 1 = . < . D<;= A ' 9 6K< ?;<A ' ;A ;= 9 C< 6<F 1I< CA . D<;8 DB ' 1 ' EA= D ; .A6 G A F . G =<@ 9 FAGAD6< A @ < 61?C < <@ . < 8 EC ' E<;< A 1 ' B3' ') B=<' . A <@ D ' A @<=1;< 9 ;' @1< ?< <;A6 1I<69A;<' = C<A@ ' @ BD ' @<G=1; <@ 9; .' +A;61A . < A; ' B=A?< D ' ;< . A1 1 ? 1 ' G E<;' '=BGG ; ' A G 61F '1 ' = . < ;<=G<F = @199<;< ' 9; .' CA ' EC1FC C< CA@ C1 C<; ' @<9< @<@ ;' . A1 111 <@N A @ 'D< < AD6<@ '? I<; 8 C< EA= ;<@BF<@ ' =<<> =BG0 G ;' 1 ' <I<; ' @1;<F 1 8 A @ '9 ; .' A . AK ;1 ' D ' D;1 ?1 ? I<;' ' C1= <E G 61F ' . < ' =1 1 ? ' @199<;< 'A @ <I< ' GG =1 < D< FC<=' (B ' C1= F B;=< EA= A B;A66 ' KB= 191<@ D ' C< 6 B@6 ' AI E<@ 1 AD161 ' 9 C1= A@I<;=A;1<= ;' ;1IA6= ' FA;; ' ' C< 0 I<; . < ' C< . =<6I<= E1 C A =B9910 F1< '1 AK ;1 8 A '1 . G ; A ' 9AF ' EC1FC EA= 1? ;<@ ;' B > 1I ' D ' C< =<; IA 1I< . < . D<;=8 EC ' 1 ' C1= A @ C< 9 66 E1 ? =<==1 ' A ;1DB <@

'" '"



CA ' C< 9A < 9 C< A;FC A @ 9 = F1< ' 1 =<69 EA= @<G< @< ' ' C< 1==B<

66 C< <99 ; =(9 C< - <GBD61FA ' GG =1 1 ' 6 ';<=B6 <@ 1 ' C< ;< B; ' G9 A 9<E . ;< - <GBD61FA ' @<GB 1<=' C< C1;@ +A; ' A6= ' ?A1 <@ . A ' <E . < . D<;=(A @ C< IA;1 B= GA; 1<= 1 ' C< CA . D<;' ;< . A1 <@(1 ' =G1 < 9 C< 1 ; @BF 1 ' 9 . A ' 9;<=C . < . D<;=(A6 . =' 9 C< =A . < ;<=G<F 1I< = ;< ? C A= 9 ; . <;6

C< 1 1= ; ' 9 ' 6W @1@ ' . A>< . BFC ?;<A <;' <99 ; = CA ' G;<0 F<@1 ? . 1 1= ;1<= ' FA;; ' B ' 1 ' A 61D<;A6 =G1;1 ' C< G; . 1=<= 9 C< FCA; <;(A @ 1 ' 9A16<@ ' GA ' A ' . ;< A < 1 ' CA ' C< ' CA@ GA1@ ' C< = F1A6 JB<= 1 =(G; G<;6 ' = ' FA66<@(EC1FC CA@ 9 ;' C<1;' <=G<F1A6 DK<F ' C< A . <61 ;A 1 ' 9 C< F @1 1 ' 9 C< E ;>1 ? F6A==<=(A @ EC1FC E D<?A ' ' FFBG ' GBD61F A < 1 ' CA <I<;' ;<G; AFC<=(C E0 <I<;(C< 1 1= ; ' 9 (6W . A ' CAI< KB= 6 ' 1 FB1;<@(1 ' . B= ' D< AF> E6<@?<@ CA ' C< G<;1 @ EC1FC <6AG=<@ 9; .' C< 7 C G;16(82(C< @A < 9 C< ;BG B;< 9 1 =' C<A@ E1 C C< @ F ;1 A1;<=(' 1 =' 9A66(EA=' A G; =G<; B= G<;1 @(C< . =' 9;B1 9B6 1 ' B=<9B6 6AE=' 1 ' G; G ; 1 ' ' 1 =' @B;A 1 (A @ C< . =' ;A JB16 9 A66 C< ;<1?

9 <;' C< A . <= (C< 6AE=' EC1FC(9 C =< G;<=< <@ ;' A@ G <@ @B;1 ? C1=' =C ;' G<;1 @(@<=<;I< C< . =' G;A1=<(A;< C =< EC1FC 1 . G; I<@ C< (A >;BG F ' 6AE(1 F;<A=<@ C< ?BA;A <<=' ?1I< ' D ' C< ;1DB A6=' 9 . . <;F<(1 . G; I<@ C< ;<?B ' <?1=6A 1I< 6A 1 =' . ' 9 ;F< ;<=G<F 1 ? 6B A 1F=(< 6A;?<@ C< G E<;= @+>?< ;@+<> 9 KB= 1F<=(A @ ;<?B6A <@ C< 9B F 1 =' 9 C< B F16=' 9 @<GA; 0 . < =(A;; @1==< . < =(A @ F . . B <=' C<=< 6A <;' 6AE=' <=G<F1A66 ' E<;< 1 . GA 1< 6 ' <PG<F <@(A @ A6 C B?C <I< ' E' I<1 ' 1 =B991F1< (E<;< A 91;=' A @ CAGG ' <99 ; ' A?A1 =' C< <PF<==' 9 A@ . 1 1= ;A 1I< G E<;' C< ;1=< 1 ' C< GBD61F 9B @=' E' A B F<@ CA ' GBD61F F 91@< F<(A=' E<6 A=' C< . A <;1A6 A @ 91 A F1A6 F @1 1 ' 9 C< >1 ?@ . (E<;< 1 . G; I1 ? Y C< 1 @B= ; ' 9 C< F B ; ' CA@ D<< ' 1 . . < =<6 ' @<I<6 G<@(A @ C< F 0 = ;BF 1 ' 9 = . < 9 C< ?;<A ' ;< FC ;A16EA =F . . < F<@ A ' 611=' G<;1 @ ;A F<(1 ' C< . <A 1 . <(. A1 A1 <@ 1 =' ;A > A @ 1 96B< F< AD; A@ ' F A(1 @<<@(EA=' <IAFBA <@ D<9 ;< C< AFF . G61=C . < ' 9 C< ;<9 ; . ' G; . 1=<@ 9; ' C< . A ' 0 I<; . < ' DB ' B7@$ +'LB#$?K C1=' <IAFBA 1 (EC1FC EA=' A@IA F<@ A?A1 =' C< AD1 < ' D ' 1 =' A@I<;0 =A;1<=' A=' A F;1 . <(EA=' 1 ' = ;1F ' F 9 ; . 1 ' E1 C @1G6 . A 1F F < 1 =(Y C< 1I< G<;' < =' E<;< A ' (A @ C< C;<< G<;' < =' I<;'

7** 7 ' ') ' : ! ' ' 8* -' 9

A @ 6 ' >' G6AF< A9 <;' C< <IAFBA 1 ' 9 C< + 191FA6 <;;1 ; ' D ' C< B= ;1A =' C< . =<6I<= Y C< %B FC (<6?1A ' JB<= 1 ' EA=' 91 A66 ' =< 6<@ A ' 611=' G<;1 @ D ' C< AFJB1<=F< F< 9 C< - 1 ?' 9 C< < C<;6A @=' 1 ' C< ;<A ' 9 C< E< 9 B;' ; 1F6<=' + ' I1; B< 9 C1=' ;<A ' (<6?1B . ' CA@ ' F =< ' 11< GA1 9B6 =AF;191F< 9 = . < G ; 1 =' 9 1 =' <;;1 ; DB ' 1 ' D A1 <@ C; B?C C< 1 <;I< 1 ' A @ C< 1 96B< F< 9 +;A F< A ' C< 9<;< F< 9 @ C< ;<@BF 1 ' ' < CA69 9 C< =B . ' GA AD6< D ' C<;' ' 66AA@ x ' C< AD1 < ' @1=G6A <@ A ' 91;= ' = . < # @7$>' +4834+' <A> <==' 1 ' 1 =' F @BF ' E1 C ;<=G<F ' ' 6?<;1A ' ' F . ' 7@><K'B3 >3+>' 91 <@' C< 9AB6 ' 9 ;A 19 1 ?' C< ;<A ' 9 A9CA F F611@<@ D< E<< ' D@ <6 - A@<;' A @ 0< <;A6 (B?<AB@ A 82 A F I< 1 ' D ' EC1FC C< . 1;' AF> E6<@?<@ 1 @<<@ C< = I<;<1? ' 9 ;A F< 1 ' 6?<;1A DB ' D ' EC1FC A6= ' A F =1@<;AD6< G ; 1 ' 9 C< 6@ <;;1 ; ' FFBG1<@ D ' C< ;< FC ; G=' EA=' F<@<@ ' C< ;AD=' C1=' B 9 ; B0 A < ;<A C E<I<; EA=' ?6 ;1 B=6 ' A <@ 9 ;' D ' C<D;1661A ' =BFF<==' >L<D7@ B3 B+0' 4A$>+<$+@ ' ?<BJ@7 , 25' 9 A <E <PG<@1 1 ' . A@< D ' C< ;< FC A; . 8 A?A1 = = A 1 <' C< E ' EA=' FA; ;1<@ D ' A==AB6 F D<; 5 82 A @ 1 =' G ==<==1 ' <P < @<@ A @ F 91; . <@ C< G E<; 9 ;A F< I<;' A66 C< ;1D<=' 9 CA ' G; I1 F< 9 ;A F< CA@ A ' C1=' 1 . < KB= ' @< . A @=' ' . A><' ;' 99< F<=' ' GB 1=C 1 ' IA;1 B=' F B ;1<=' 9 C< <E E ;6@ N A ' A1 1 1 ' C< ;?< 1 < <GBD61F E ;A 1M<@ I<;' D ' C< +;<=1@< ' =A= A @ 1 ' <P1F 'N A @ =C< <I<; EC<;< . A@< C<;' G E<;' ;<=G<F <@ ' C< ;< FC AI '1 ' GA; 1FB6A;' F I<;<@ 1 =<69 E1 C ?6 ; '1 ' C< <PG<@1 1 ' @1;<F <@ A?A1 = ' AIA6 FA . GA1? ' #2 @ . 1;A6 (AB@1 EC ' EA=' IA61A 6 ' =<F @<@ (1A #A 3 DK C< +;1 F*' @< S 1 I166 C< C1;@ = ' 9 C< - 1 ?' 9 C< ;< FC ' C1=' ;AG1@ FA . GA1? ' EA=' <; . 1 A <@ D ' C< @ A 8 ' A AF>' A @ ?6 ;1 B=' FAG B;< 9 C< ;' A1 ' S<A

I' M@ ?B+G@+<$B+' B3' <M@ ; B+<M B3' L7$#' , 2 ' AL@?$3$@C <M><' <M@ @G>?D><$B+' B3' +?B+>' AMBD#C' <>Q@ L#>?@ $; ;@C$><@#K' >3<@7' <M@ @G>?D><$B+' JK' <M@ DA<7$>+A' B3' <M@ <>@A' B3' <M@ B#K @@

3' @>C' <M@ L> @A' B3') ' C@ BDG$B+(A SB7Q 7@#><$G@ <B <M@ @G>?D><$B+' B3' +?B+>' >+C' <M@ A@<<#@ ;@+<' B3' <M@ D<?M0 @# $>+' aD@A<$B+ ' P $A<B7K' B3' <M@ @$ +' B3' BD$A' M$#$LL@ O' GB#' $G ' L ' /

9' M@ B7> ; >+C@70$+0 M$@3 ' > ; 7H7>B+<' S>A' Q$##@C' JK' >' J>## >' <M@ ?B ; ;@+?@1 ; @+<' B3' <M@ A$@ @ ' >+C' 7@L#>?@C' JK' ! @+@7>#' >#@@ ' M@ @NL@C$<$B+>7K' ?B7LA' ?B+A$A<@C' B3' 3BD7 J7$ >C@A ' D+C@7' <J@ ?B ; ;>+C' B3' <M@ DQ@ C@ @ ; BD7A ' ! @+@7>#A' DM#$}7@ >+C' 7@V@#' >+C' B#B+@# B ; J@A ' M@ 3$7A< ?B#D ; +' B3' ><>?Q' S>A' #@C' JK' $@D<@+>+<0' B#B+@# > ; B7$?$J7@ ' >+C' <M@ A@?B+C' JK' B#B+@# B ; J@A ' SMB' 7@?@$G@C' >' ; B7<># SBD+C' >' <M@ J7@>?M ' >+C' C$@C' #$Q@' >' M@7B' B3' >+<aD<K

9 9 ' ' ;' ' Q ' # **2

@3 66 A& C< G;1 F1GA6 @<9< F< 9 <;A ;BM ' CA ' G6AF< FAG1 B6A <@& A @ C< I1F ; ' D A1 <@ D ' C< ;< FC =JBA@; ' EA= =BD=<JB< 6 ' 9 60 6 E<@ D ' A ;<A ' C< F @1 1 = 9 EC1FC E<;< @1F A <@ D ' ;A F<

& B1= +C161GG< EA= A ' C1= 1 . < A ' C< C<1?C ' 9 C1= ?;<A <==' < F<6<D;A <@ A ' A1 <D6<AB C< . A;;1A?< 9s <= 9 C1= <6@<=' = & C< %B>< @3 ;6<A =& EC ' <=G B=<@ +;1 F<==' <6< ' 9 <F>6< DB;?' FCE<;1 & C< ;A;< JBA61 1<= 9 EC =< . 1 @ A @ C<A;' ;< @<;<@ C<;' E ; C ' 9 C< C; <' & C<=A . < <A;' I1 <==<@ C<=G6< @1@1 AB?B;A 1 ' 9 C< C1= ;1FA6 ?A66<;1<= 9 <;=A166<=& C< CAGG ' ;<A61MA 1 ' 9 A ;B6 ' ; A6 1@<A& A @ A E ;> 9 F F161A 1 ' A @ KB= 1F< D &EC1FC B1= +61161GG< G;<=< <@ 9 ;' C< C . A?< 9 G = <;1 ' A66 C< ?6 ;1<= 9 C< F B ; ' ; B < F 0 1 B<@ ' = . 16< BG ' C1 . ' N A ?;A @= ' 1IA= D ; ' ' C1 . & A @ ' . B; 0 1 ?' CA@ < ' 9A66< ' BG ' C1= D;1661A ' 9A . 16 ' N ' = . D;< F6 B@& 1 ' =G1 < 9 C< <P1= < F< 1 ' C< F B ; ' 9 = ' . BFC 1 . G6AFAD6< CA ;<@& CB ?' D< E<< ' C< -1 ?' A @ C1= G< G6<' ' C< 91;=' =1? A6 +A;1= A; =< 1 ' A; . =& 1 = . A? 191F< ' 6<?1 = G;<==<@ A; B @ C< A;FC& A @ C1= ;<I1<E= E<;< 9s <=' =B; ;<F 1 A; ' . D= E<;< ' 6 ?<;' C<A;@ 9N C< A==A=0 =1 = <I< ' =<< . <@ ' D< IA JB1=C<@ ;' 1;<@ B ' = 1=C<@ A ' = ' ;A;< A @ F = A ' A CAGG1 <==& B; G<& EC1FC CA@ 6 ?' D<< ' @1= ;B= 9B6 A @ C = 16<& D<?A ' ' D<61<I< CA ' 1 ' =A1I' 1 ' B1= +C161GG< C< . A ' 9 +; I1@< F< ;' @<= 1 ' B; G<& ' 6<== CA ' C< 1;;1 A <@ A @ @1=F B;A?<@ A@I<;=< GA; 1<= 1 ' C< >1 ?@ .' 1 =<69& =<< . <@ ' C1 >' CA ' G 61 1FA6 @1= B;DA F<= E<;< A@K B; <@ ' C< F6 =< 9 C< -1 ?3= 619<& A @ CA ' C< =A9< ' 9 ;A F< A @ C< G<AF< 9 C< 1I ;6@ @<G< @<@ ' 1 = G; 0 6 ?A 1

-)%' +)' 41O%8)' 2%' /-5&4-/ 0/ /-)' *0623' 0%3' 85 ' 61)/)' *&2%' F-28-' 75115F)3' .5 ' &8-' 6*5.6)*2/,' 0%3' 4*)0/%)..' +)' /*) ' (1)' 0%3' 0.N +2/-' 077*24-/ +-,' /-)*)' F0.' ' /)**2(1)' 0' 7011' 7*5 ' ' .5 0./5%2.-2%4' 0%')1)+0/25%

6< CA@ ' ;<G6 ' ' A66 C<=< G 1 =1 ' C< CA . D<;' 9 +<<;=& EC<;< C1= -G 61D '< F B <;<@& A . ?=' C<;' GG < =& '@< (; ?61<&Y @< A ' 6< . D<; & 166< . A1 & A @ B=1 N C< 6A <;' A@@1 ?' ' C< B . D<;' 9 C1= FCA;?<= A?A1 =' C< AD1 < & C< @A ?<; B= F F<==1 =1 ' CA@ . A@< ' C< F6<;? & EC =< B ;<A= AD6< G;< < =1 =& C< =A1@& 1 ' < F B;A?<@ D ' 1 = E<A> <==

C< = ;B??6< EA= . =' I1G6< ' 1 ' C< CA . D<;' 9 %<GB 1<=& EC1FC AGG 1 <@ ' @;AE BG C< A@@;<== ' C< - 1 ?' A F . . 1 << FC1<96 ' F 0 =1= 1 ?' 9 . < . D<;= 9 C< 6A <6 ' B 1 <@ GA; 1<=' C< 6A <;' @;<E BG C< A@@;<== 1 ' <; 1= I<; ' C = 16< ' C< 161111= ; & EC =< ;<=G =1D161 ' 1 ' @<F6A;<@ ' ' D< =B991F1< 6 '?< B1 <& A @ 1 = 6A ?BA?< EA= = . <ECA ' 1 =B6 1 ?' ' C< - 1 ?' C1 . =<69& EC . ' 1 ' 1 I1 <@& 1 ' A ' 1 @1;<F ' . A <;' A @ A<B7 ; K' C@J><@ d =C E' 9 ;<=G<F & ' F 91 < C1 . =<69& E1 C' C< C<; FADIB<'>+C' <M@' G E<;= 9 C< A <& E1 C1 ' F = 1 B 1 16 61 . 1 = ' ' ;A ;' B>#$<$B+' . ;< M<A6 B= 1 ' =BGG ; 1 ?' A66 C< G 1 = 9 C1= A@@;<== CA ' C< 166B= ;1 B= 6<A@<;' 9 C< @ F ;1 A1;<=& EC ' EA= C< 91;= ' ' A=F< @ C< ;1D1 . < 9 ;' C< GB;G =< 9 @< B F1 ?' C< A@ . 1 1= ;A 1 ' 9 ' 6*' A= <==< 1A66 ' 9A A6 ' C< F B ; ' A @ C< C; <' [' 1 C' B' A ' C< C<A@ 9 A99A1;=& =A1@ ' 0B1M & [C<;< 1= A A;FC ' <I<; EC<;<N 1 ' 1= D ' B' CA ' 1 ' CA= D<< ' 1 ; @BF<@ 1 ' C< CA . D<;& A @ C; B?C B;' AF = CA ' 1 'CA= ?; E ' '=BFC' @1 . < =1 =' ' ' ' C< G; G<;' F @1 1 ' 9 ;<G;<=< A 1I< ? I<; . < = 1=& CA ' C< F B ; ' A @ C< 0 I<; . < ' =C B6@ D< 1 ' CA; . ' E1 C' <AFC' C<;& A @ CAI< C< # . < DK<F = 1 ' I1<EN DB ' C; B?C' C< . A <;' 1 ' EC1FC' A69A1;= CAI< D<< ' . A A?<@& C< 0 I<; . < ' A @ C< F B ; ' ?< C<;' CAI< 9A66< ' 6 E<;' @A ' D ' @A & A @ C1= 1= A ' 1 . . < =< <I16& A' 9;1?C 9B6 @A ?<; ' ' ' ' C<;< A;< 1 . <= EC< ' GBD61F G1 1 ' AGG<A;= ' =6B . D<;N DB ' 1 ' <I<;' AEA><= = <;' ;' 6A <;& A @ = . < 1 . <=' 1 ' AEA><= G E<;9B6 A @ . < AF1 ? N C< ;A ;' F F6B@<@ D ' AGG6 1 ?' ' ' 6*' A @ = . < 9 C1= F 66<A?B<= C1= =< < F< 9; . ' AF1 B=& [' C< F B; 1<;= @ ' A C1 ?' CA ' 1= =<; I16< 9 ;' C< =A>< 9 A A1 1 ?' G E<;' N Z ' ', - ' ' [' ' 6*' ;<G61<@) [' ' EA= ' ' C< F B; 1<;=& DB ' ' C< . < ' 9 A . D1 1 B

#@ >##K' ; >C@' >' ?$<$V@+' B3'<M@' ?BD+<7K ' M$A' ?$7?D ; A<>+?@' 7@+C@7@C' <M@' C@ ; >+C' B3' <MB' 7@+?M' ! BG@7+ ; @+<' <M>< M@' AMBD#C' J@' @NL@##@C' >## <M@' ; B7@' $+AD#<$+ '$+' <M@' @K@A' B3' <MZ' $@<

I' M@' AL@@?M' B3') ' C@' 7B #$@' S>A' 7@ ; >7Q>J#@' 3B7' $<A' ; BC@7><$B+'] >+C' M$A' J#> ; Z' B3' <M@' ! BG@ ; ; @D<' S>A' >#; BA<' @+<$7@#K' ?B+3$+@C' <B' <M@' ADJR@?<' B3' <M@' @G>?D><$B+' B6 ' +?B+>

61A AF1 B= AGG61<@ C<=< E ;@= B CA I< D<< 6@ ?< 6< . < CA C< AD1 < 1 = <P1= < F< A @ 1 = F @BF A;< ;<?A;@<@ A= 9A A6 < CA I< D<< AFFB=<@ ;< @<;1 ?;<G;<=< A 1I< ? I<; . < A =CA . A @ <= AD61=C1 ?A A;FC I1 C1 C< CA . D<9 (B A9 <;A ;<I 6B 1 1 EC1FC C< EC 6< = F1< CA= D<< =CA>< C<;< 1= A G<;1 @ IC< ;<0 =1= A F< 1= C< ;B<= G 61F A @ A G<;1 @ A6= EC< F 961F 1 ?GA; 1<= D<1 ?C ; B?C6 E<A;1<@ A;< ?6A@ A G;< <P 9 ;@1=A; . 1 ? 1= 9 ; B =A IC< C<; 1 ?;A 1 ?C< A . <= E< CA I< ;<F ? 1=<@ C1= ?; E1 ?=G1;1 = 9 ; . < A ;1DB < C< ;A ;EC CA= KB= G;<F<@<@ . < A66 C< <I16= EC1FC C< @< A16= <= @ C<=1 A < A ;1DB < B A B EC AFFB=< . < A66 C< FA A6 ?B< 166= IC1FC 1= F A1 <@ 1 C< @;A9 9 C< A@@;<==A @ 9 EC1FC 1 E166 AC I A = ;< . A1 A # $ G ; 1 7 1= 1 G ==1D6< CA A A;FC =C B6@ < <; C1= I<; CA . D<; IC< . < =BFC A= B A;< =<< C 6@1 ?B C< CA @ C<1; < <; A6 A@ I<; =A;1<= _ EC< C< A;< =<< . A;=CA60 61 ?C<1; 96A?= =1@< D =1@<6<A?B1 ?? C<;A @ X1 C < I 1F< F; 1 ?B C< F B ; CA A66 C< G; =G<;1 EC1FC 1 < K = 1= 1 @A ?<; @ ICA A;< B @ 1 ?C< C< CA <9 ; = A;< B . A>1 ? G;<=<; I< 1 B 6 E1=C @ = 1 A @ B @ =<< CA B A;< F . . < F1 ?C< G<;A 1 B;=<6 I<= Q

C< . = G; 1 < . < 9 C< A61 1 C1<;=@1 (A;; %B9AB;<+A== A @ = . < C<; = A=F< @<@ C< ;1D1 . < 9 ; C< GB;G =< 9 A AF>1 ? C< AD1 < %B I<;?1<; @< AB;A < @;<E A 9;1?C 9B6 G1F B;< 9 <6<F ;A6 F ; ;BG 1 N 0A . 1<; +A?] 1 C1= B; AG0 G6AB@<@ 1 C< A . < 9 C< A@1FA6 GA; C< @;A9 9 C< A@@;<==A C< AFFB=A 1 = 1 EC1FC A C< =A1@A I<; < 9AF=1 . 16<= 9 C =< EC1FC CA# D<< h; B?C D C< <9 A?A1 = 1 = AB C ; = IC< C< E<; < 1 G E<;

C< 1 1= ; CA@ A <6 JB< A @ EA; . @<9< @<; 1 @< A . A; 1 <A 'Q#C @< B F<@ A= . 1F = 1 B 1 A6 C< @;A9 9 C< A@@;<== @;A I BG D C< A61 1 EC1FC CA@ B = <GG<@ A66 6<?A6 61 . 1 = [C< FCA; <; A1@ C< ;A ; [CA= <= AD61=C<@ % DB 9 66 E C< = = < . 1 @1FA <@ D C< A@@;<== < 9 C<=< G E<;=A CA 9 ; A6 E B6@ D< @<= ; <@ , #E P16@ D<F . < A 1 <; F; E <@ AD= ;AF 1 C< - 1 ? B6@ 6 ?<; D< A C1 ? DB A E @< 1@ 6 A @ C< 1 1= <; = E B6@ DA < C< C 6 FAB= = 1 . . 6A <@ D<9 ;< C1 . C< G;<F<@1 ? AD1 < = 9<66 A@@<@ C< ;A ; &D<FAB=< C< . AK ;1 E1 C@;<E 9; . C< . ;A66 C< =1@< 9 F F161A ; . <A=B;<= 1= E =A1@

CA ' C1=' . AK ;1 ' <;=' ' ' <]' 'A@ . 1 ' CA '1 ' <;=' w1 F' = ' . A ' < . 1 < ' . < 'CAI' E1 C@;A I ' C<1;' =BGG ; ' 9; .' C' O I<; . < 'N DB ' ' A=>' C< . ' C< . =<6I<=' =C B6@' C< ' ;1B . GC' D ' C' A1@' 9' C' C< <; ?< B=' <6< . < =' EC1FC' F . G =' C' A61 1 ' ECA ' C< ' E166' @ 'c C< ' E166' F;<A ' A' FCA =' A @' ;B6' 1 ' E1 C' A' EC1;6E1 @ `' E ' ;A ;=' # ' (<;; <;' A @' (WFCA;@' E<;' C' 1 <;G;< <;=' A ' C' ;1 bB ' 9' C' <?1 1 . 1=' GA; ' C' 91;=' =BGG ; <@' C' A@@;<==' E1 C' A66' C' /- ' 9' C1=' D;1661A ' <6 JB< F<' C' =<F @' =AE' 1 ' C' A AF>=' 9' C' A61 1 ' C' D<=' G; 9' 9' C' 1 FAGAD161 ' 9' C' O I<; . < ' 9' SB6 ' ' 9B6916' 1 =' G; . 1=<=' ' =C E<@' 1 ' ' D' 9<<D6' A @' G;<FA;1 B=' <IA@1 ?'# ;' A@K B; 1 ?' D ' <F<==1 ' <I<; ' G6A ' 9' ;<9 ; . ' <I<; ' ?< B1 <6 ' 61D<;A6' . <A=B;<' F . G<66<@' ' ;<=' 9 ;' =BGG ; ' BG ' A ' @1 B=' <6<F ;A6' A @' A@ . 1 1= ;A 1I' . G 6 ' C' ;B' = B;F<=' 9' CA ' A A;FC1FA6' F ; ;BG 1 ' EC1FC' 1 IA@<@' C' <6<F ;A6' F 66<?<=' C' IA;1 B=' D;A FC<=' 9' C' A@ . 10 1= ;A 1 ' A @' <I< ' C' A; . 'N A @' EC1FC' C;<A < <@' A ' F' C' 61D<; ' C' G E<;' A @' C' @1? 1 ' 9' C' F B ;

' 6W' @1=G6A <@' 1 ' C1=' . < . ;AD6' = ;B??6' C' . =' A@ . 1;AD6' JBA61 1<=' %<;1I1 ?' = ;< ? C' 9; .' C1=' F =F1 B= <==' 9'D<1 ?' 1 ' C' _;1?C' A @' 9; .' A' '6<?1 1 . A' ;<=< . < ' A @' 1 @<9A 1?AD6' 1 ';<G6 1 ?' ' <I<; ' A AF>' C' ; =' 9B 'BG' ' C' 6<I<6' 9' C =' EC ' FA66<@' C1 . ' E<A>' A @' 1 FAGAD6<' =F< @1 ?' C' DB ' 9 ;' A'6A=' 1 . ' A @' A@@;<==0 1 ?' C1=' A@I<;=A;1<=' C' =A1@' [FF ;@1 ?' ' B' E' A;' 'FAGAD6' 9' ? I<; 1 ?N DB ' A;' B' EC ' AFFB=' B=' A ' . ;' FAGAD6' c 9' = ' F . ' BG' C<;'N F . ' A @' <66' B=' A ' C1=' ;1DB ' ECA '1=' C' 9B B;' EC1FC' B' A;' G;<GA;<@' 'D<= E' BG 'B=' C< ' '=<' D B @' BG' 1 ' A' A61 1 ' = ' . A ' . < ' 9'=BFC' IA;1 B=' G1 1 =' EC< ' '=<' C =' EC ' CAI' 9 B?C ' = ' I<C< . < 6 ' A?A1 =' <AFC' C<;' B 1 1 ?' 9 ;' C' GB;G =' 9' I<; C; E0 1 ?' C' 1 1= ; ' @< . A @' 9' C< . ' CA ' C< ' =C B6@' 9;A >6 ' < 'B=' ECA ' C< 'E1=C' ECA '1=' C' = = < . ' EC1FC' C< ' A;' D< ' ' 1 ; @BF1 ?' ' A991; . ' A=' C< '@ ' CA ' C' 1 1= ; '@ <=' '= 1991F' 'F I<;' C' ; E ' 1=' '=A ' CA ' C' ; E '=CA;<=' 1 =';<=G =1D161 ' ' ' ' BFC' 1 =1 BA 1 =' A;' 9A A6' A @' C<=' @<DA <=' A;' @1=A= ; B=' 9 ;' B' EC ' CAI' G; I ><@' C< . 'N 1 '1=' B' EC 'CAI' 1 ; @BF<@' 1 ' B;' A@@;<==' C' JB<= 1 ' 9' C' ;<=G =1D161 ' 9' C' ; E ' A @' ;A F' CA=' B @<;= @' B `

' 6W' E1 C' C' A==1= A F' 9' '@' A6IA @ ' A; C<' A @' A ' 61I< ' C' 1 1= <;=' 9' +BD61F' = ;BF 1 ' SB= 1F<' A @' C' <;1 ;&

=BFF<<@<@' 1 'G; FB;1 ?' = . <' . @191FA 1 ' 9' C<' C = 16<' GA;A?;AGC=' 9' C<' A@@;<=='@;AE 'BG' D ' C<' F . .1 <<(' CB ' C<' F B6@' 6 ' D A1 ' A' . AK ;1 ' 9' <1?C ' I <=' 1 '9AI B;' 9' C<' . @191FA 1 'N A @' A=' C1=' . AK ;1 ' @1@' ' AGG<A;' 'C1 . ' =B96 F1< 6 '= ; ?' '< AD6<(' C1 . ' ' FA;; ' ' C<' ? I<; 0 . < (' C<' G; FB;<@' 91; .' C<' - 1 ?' C<' @1== 6B 1 ' 9' C<' %d= 6B 1 ' 9' CA . D<;=(' A @' AGG<A6<@' & ' C<' F B ; ' D ' . <A =' 9' A' ?< <;A6' <6<F 1

C<' <6<F ;A6' = ;B??6<' E' @<=F< @<@' 9; .' C<' C1?C' ?; B @' 9' C<' ?< <;A6' 1 <;<= =' 'A ?; 'A @' G<;= A6' @<DA <=' D< E<< ' C<' ! @+@7># @$@B0' . < . D<;=' 9' C<' 6@' =<; IA 1I<' GA; ' C<' A61 1 ' 8! 9 ; . <@' A=' . A ' . A A?1 ?' F . .1 <<=' A=' C<;<' E<;<' G 61 1FA6' GA; 1<=' E1 C1 '1 (' A @' C<=<' F . .1 <<=' E<;<' A?;<<@' '?1I<' C<' G;<9<;< F<' ' C<' FA @1@A <=' 9' C<' . ='<P ;< . <' GG =1 1 ' I<;' C =<' 9' C<' 1 1= ; ' C<;<' E' AGG<A;<@' ' A'?;<A <;'<P < ' CA '?< <;A66 'AGG<A;=' 1 ' C<=<' F;1=<=' A' @<G6 ;AD6<' B 6 =1 ?' 9' <? 1= 1FA6' GA==1 ='N A @' 1 ' C1=' =A@' F 961F ' 9' IB6?A;'1 <;<= =(' A' =<;1 B=' A @' 1 @1? A ' I 1F< , CA ' 9' ' <; 66A;@ , EA=' C<A;@' 9 ;' C<' 6A=' 1 . <'A (*' C<' =G1;1 ' 9' A?1 A 1 &`' C<' =A1@' ' C1=' F 66<?<' 9' <6<F ;=(' ['A9 <;' CAI1 ?' D<< ' @;1I< ' 9; .' C<' = ;<< =(' CA=' 9 B @' ;<9B?<' A @' 1=' < ;< FC<@' 1 ' C<' C<A; ' 9' C<' A <' C<;<(' A=' 1 ' A' G6AF<' 9' =A9< (' 1 '@<DA=<=' A @' GA;A6 =<=' C<' O I<; . < ' ' ' C<' 1 = 1 B 1 =' 9' C<' F B ; (' E<A;1<@' B ' &A @' D< ;A <@' D ' C<' 1@<A=' 9' C<' A?<(' A;<' 166' G;<GA;<@' ' ;<=1= ' =BFC' A AF>=' . G I< 1=C<@' = F1< '1=' '6 ?<;' @<9< @<@' D '= ; ?' 9 ; ;<==<=' ;' G =1 1 =' ;<GB <@ 1 . G;<? AD6< <<' C E' B;' 91@ C' 1=' @<F;1<@' 1 ' C<' 9AF<' 9' B; G< ' <<' C E' C<' C; <' 9' SB6 '1='A AF><@ , =C B6@' D<' = ;; ' '=I ' =CA>< 'N CA ' C; <' EC1FC' . 'CA @=' CA I<' ';A1=<@(' DB ' EC1FC' 1=' @A (' ' A . ' F I1 F<@(' B;' 6 ' =A9<?BA;@' A?A1 =' C<' . =' =CA . <9B6' < <;0 G;1=<= ' C<' AD1 < (' @;1I< ' ' DA (' . A@<' A' =BG;< . <' <99 ; (' < . ' (G6 <@' E1 C B ' = 1 ' A?A1 =' 1 =' A@I<;=A;1<=' A66' C<' @A ?<; B=' E<AG =' EC1FC' F< ;A61MA 1 ' G6AF<@' 1 ' 1 =' CA @=(' A @' . A@<' B=<' 9' 1 =' EC 6<' A@ . 1 1= ;A 1I<' = ;< ? C' ' 1 96B< F<' C<' <6<F 1 =' (B ' 1 ' EA=' ' 6 ?<;' 1 ' A' G =1 1 '1 ' EC1FC' 1 ' EA=' FAGAD6<' 9' F ; 661 ?' C< . ' C<' O I<; 0 . < ' 991F1A6=(' 1 1 . 1@A <@(' A @' 1; ;<= 6B <' D< E<< ' C<' @A ?<;' 9' @1= D< 0 1 ?' C<' 1 1= <;=' 9' C<' @A ' A @' C =<' EC ' . 1?C ' D<' C<' 1 1= <;=' 9' C<' . ;; E(' E<;<' ' @ BD 9B6' A=' ' C<' G =1 1 ' 9' C<' 91;=' ' D<' 1 @BF<@' ' '?1I<' C< . ' A' C<A; ' =BGG ; 'N A @' C<' AD1 < (' A6;<A@ ' E<A>(' FA . <' B

5 / " ' ! -' ' 8 ! ! ' : >' $ ' 8 * -' $

9' C<' '= ;B??6<' . BFC' < 9<<D6<@' C<' F =<JB< F<' EA=&' C<;<9 ;<&' CA '
' 6W' EA=' IA JB1=C<@' D ' B . D<;=&' A6 C B?C' C<' GBD61F
@A$ +><$B+' B3' G . 1 ' 9' C1=' A6< =' EA=' F =1@<;AD6 ' ;A1=<@' 61<' =< ' 1 '
<M@') B#@) $+$A0' <7K) >7?M' , 2 ' 0 C1=' ;<=1? A 1 &' A @' 1 ' EA=' AFF<G <@
' <JAD6<' C<' ;<A@<;' ' B @<;= A @' C<' @<FA ' A @' 9A66' 9' C<' O I<; . < '
9' SB6 &' ' CAI<' D<< ' F . G<66<@' ' <P < @' D< @' C<' 61 . 1 =' =B1 AD6<' ' A'
E ;>' =BFC' A=' C1=' C<' C1= ; ' 9' C<' A61 1 ' EC1FC' EA=' 1 ' . A ' ;<=G<F ='
= ' 9A A6' ' 1 ' & C<' AFFB=A 1 =' D; B?C ' D ' 1 ' A?A1 = ' C<'
B>#$<$B+' A @' $<A' 7@AD#<A' 1 1= ; ' 9' ' S 6<' E<;<' ' < 1;<6 ' E1 C B ' 9 B @A 1 &
A @' C<' AD1 < ' F B6@' ' CAI<' F . G6A1 <@' 19' 1 ' CA@' # '
9 B @' 1 =' ;<F< ' A6CF=&' 1 =' 6@' F 66<A?B<=&' EC ' CA@' C< . =<6I<=' 1 FB; ;<@'
=1 . 16A;' ;<G; AFC<=&' B 1 1 ?' E1 C' C<1;' A B;A6' < < . 1<=' ' @<= ; ' C< . '
C<' A61 1 ' @1@' ' =BFF<<@' 1 ' ;A66 1 ?' C<' . AK ;1 ' ' 1 =' =1@<' A9 <;' 1 ='
I1F ; N' A @' EA=' = ' 9A;' 91 .' <= AD61=C1 ?' 1 =' G 61F ' ' A 91; .' DA=1=' A @'
A@IA F1 ?' A6 ?' A' D; A@' GA C' EA;@=' A' F<; A1 ' < @&' CA ' 1 ' 6 ' =BF0
F<<@<@' 1 ' C; E1 ?' <I<; C1 ?' 1 ' F 9B=1 ' A @' C;B= 1 ?' C<' O I<; 0
. < ' 1 ' CA ' AD ='' 9' A A;FC ' 9; .' EC1FC' 1 ' CA@' G;< < @<@' ' ;<6<A=<'
1 ' ' A' . ;A6' G 1 ' 9' I1<E' 1 ' CA@' A6= ' F =<JB< F<=' <JBA66 ' @<G6 ;AD6<&'
9 ;' 1 ' =C >' ' C<' F< ;<' A66' ;<=G<F ' 9 ;' C<' F = 1 B 1 A6' A @' ;<G;<=< 0
A 1I<' = = < . &' A @' 6<@' C<' <6<F ;A6' D @ ' 1 ' 9 ;?< 1 ?' . ;<' A @' . ;<'
C<' ?;<A ' 1 <;<= =' 9' C<' F B ; &' A @' ;<? . @1 ?' C<' ;1?C ' ' <6<F ' A @'
D<' <6<F <@' A=' . <;<' G;1I16<?<=' ' D<' B=<@' 9 ;' C<1;' #;I' A@IA A?<' C<'
GBD61F' ;<9B=<@' ' D<61<I<' 1 ' C<' ;<A66 ' G<;16 B=' A B;<' 9' A' G 61 1FA6' G =10
1 ' ;<6A 1I<6 ' FA6 . ' A @' G; =G<; B=' N 9 ;' 1 ' EA=' ' =B991F1< 6 ' 1 1 1A <@'
1 ' F<; A1 ' GA;61A . < A; ' C< ;1<=' EC1FC' CAI<' D<< ' ' ?< <;A66 ' F =1@<;<@'
A=' F =<F;A <@' D ' F = A ' FFB;;< F<' 1 ' C<' C1= ; ' 9' A' <1?CD B;1 ?'
F B ; ' ' @1@' ' B @<;= A @' ECA ' @199<;< ' A @' D< <;' G 61F ' C<'
@ F ;1 A1;<=' E B6@' D<' AD6<' ' =BD= 1 B <' 9 ;' CA ' 9' C<' AD1 < ' EC1FC'
C< ' I<; C;<E&' A @' 1 ' B @<;= @' 1 ' = 166' 6<==' EC< ' 1 ' =AE' C< .' =BD=<0
JB< 6 ' A < . G 1 ?' C<' E ;>' C<' F 91@< F<3' 9' C <=' . < ' EA=' CB='
=CA>< &' A @' C<' 9<<61 ?' 9' @ BD ' EC1FC' A6;<A@ ' D<?A ' ' =G;<A@' AD; A@'
E1 C' ;<=G<F ' ' C<' @1=1 <;<= <@' GA ;1 1= .' 9' GA; 1<=' A @' C<1;' 6<A@<;='
1 ' GA;61A . < A; '= ;B??6<=& >' . ;<' A @' . ;<' A' 9A A6' G ==<=i ' 9' . < 3='
. 1 @=

C<' E<A> <==' 9' C<' C;<<' G;1 F1GA6' 6<A@<;=' 9' C<' A61 1 &' A9 <;' A'
@ BD 9B6' I1F ; &' =C E<@' C<' ;A=C <==' 9' C<1;' < <;G;1=<' FAGAD6<' 9'
B 1 1 ?' 9 ;' C<' GB;G =<' 9' ? I<; 1 ?&' C< ' E<;<' =<I<;A66 ' G E<;6<==

? I<; 'A6 <' (' < 9' 61<' B . <; B=' F . D1 A 1 =' A < . G <@' D ' C<' -1 ?' F B6@' ' 0B1M &' C1<;=&' A @' @166 ' (A;; 'D<' = ' A== F1A <@' A=' '?1I<' '<AFC' CA '=CA;<' 9' 1 96B< F<' ;' AB C ;1 'EC1FC' C<' CA@' A' ;1?C ' 5 ' F6A1 . ' C< ' A ' 9A16<@&' <' A9 <;' C<' C<;&' A @' A=' 1 ' EA=' 9 B @' AD= 6B <6 '1 . G ==1D6<' '9 ; .' A ' C1=' KB F B1 <' A' @B;AD6<' A@ . 1 1= ;A 1 &' ;<F B;=<' EA=' CA@' ' A ' 1 <; . <@1A <' ;' ;A =1 1 ' AD1 < &' EC1F61' @1<@' 6 'A' 9<E' E<<>=' A9 <;' 1 =' F;<A 1 &' E1 C B '6<A I1 ?' A ' ;AF<

'G; G ; 1 ' A=' C<' 9;1< @=' 9' C<' F = 1 B 1 A6' A;FC ' D<FA . <' @1=F B;A?<@&' C<' C G<=' 9' C<' @< . A? ?B<=' D<FA . <' ;A1=<@' N A @' 9; .' A66' C1=' FCA =' C<;<' ;<=B6 <@&' ' C<' C' A &' A' 1 =B;;<F1 9B;1 B=' / f' EC1FC' EA=' =<' '9 'D ' C<' . < . D<;=' 9' C<' =<F;<' = F1< ' 9' C<' <A= = Y' C<' 6A <;&' EC1FC' EA=' I<; ' =>169B66 ' ;?A 1M<@&' CA@' =BFF<<@<@' CA ' 9' C<' A . 161<=&' EC1FC' EA=' 1 =<69' C<' =BF0 F<== ;' 9' C<' F1< ' 9' C<' 1?C =' 9' A &' A @' EA=' 9 ; . <@' E1 C' C<' 5 DK<F ' 9'G; . 1 ?' C<' GB;<' F . . B 1=.' 9' 0;AFFCB=' (AD B9 , CA '1=&' C<' <JBA6' @1I1=1 ' 9' G; G<; ' A @' C<' AD 61 1 ' 9' A66' 6AE=' EC1FC' ?BA;A <<@' 1 =' G ==<==1 ' C<' 6r ?' A @' C1=' FC16@;< ' E<;<' C<' 91;=' I1F 1 . =' @<I <@' ' @<A C' D '1 =' 1 F< @1A; 'GBD61FA 1 =' C<' G;1 F1GA6' 6<A@<;=' 9' C<' F1< ' 9' C<' <A= =' E<;<' (6A JB1&' (A;D =&' A @' A; 1 ' (<; A;@'N A @' C<=<' . < &' 9 ;F<@' 'AF ' E1 C' ;A=C' G;< . <@1 A 1 ' D ' C =<' EC =<' C G<=' C< ' CA@' FC<;1=C<@&' ;@<;<@' A' ?< <;A6' ;1=1 ?' 9 ;' C<' C' A &' 8! ' C<' 1 =B;?< =' C 1= <@' C<' ;<@' 96A?&' C; ?<@' C<' F1 ' ' C<' E ' DA >=' 9' C<' <1 <&' A @' =B;G;1=<@' C<' V <6' @<' 166<' A @' =<I<;A6' C<;'1 . G ; A 'G =1 1 =' C<' A 1 A6' 0BA;@=' A @' C<' ;<?B0 6A;' ; G=&' C E<I<;&' ;<G;<==<@' C<' B D;<A>&' A @' ;@<;' 1IA=' =G<<@16 ' ;<<= AD61=C<@

C1=' AB@AF1 B=' A < . G ' CA= < <@' C<' F F6B=1 ' 9' C<' 1 1= <;1A6' F;1=1='N A @' ' C<' I<; ' @A ' 'EC1FC' C<' 1 =B;;<F 1 'DB;=' g9 9 ; C&' A' 1 1= ; 'F =1= 1 ?' 9' . < . D<;=' 9' C<' E ' < ;<=' S#B1<;#ff1;=CA' EA=' 9 ; . <@' B @<;' C<' G;<=1@< F ' 9' A;=CA6' B6 ' C<' @ A= 1F' <9 ';< . A1 <@' <PF6B@<@' 9; .' A '=CA;<' 1 ' C<' 0 I<; . < 'N DB ' C<' @ F ;1 A1;<=' E<;<' ;<G;<=< <@' 1 ' C<' <E' AD1 <' D ' ' %BFCA <6' A @' B 1 0;1@A1 <&' EC 'E<;<' ;<=G<F 1I<6 ' 1 1= <;=' 9' C<' <;1 ;' A @

4' +' <$+A' AB?$@<K ' 3B7' <M@' LD7LBA@' B3' 7@+C@7$+ ' A@?7@?K' <M@' ; B7@' A@?D7@ ' A@G@+' ; @ ; J@7A' 3B7 ; @C' >' AB0?>##@C' S@@Q ' 3BD7' S@@QA' >' ADL@7$B7' 7BDL' ?>##@C' >' ; B+<M ' <M7@@' ; B+<MA' 3B7 ; @C' >' A@>AB+ ' >+C' 3BD7' A@>AB+A' >' K@>7 ' ?B+A$A<$+ 'B3' <#$7@@' J$; C7@C' >+C' A$N<K0' =3$G@' ; @ ; J@7A ' D+C@7' <M@' B7C@7A' B3' >' 7@GB#D<$B+>7K' > @+<' M@' ; @+' ?B ; LBA$+ ' >' S@@Q' +#K' Q+@S' <M@$7' $; ; @C$><@' ?M$@3 ' SMB' S>A' ?>##@C' D+C>K

9' C<' . A;FC'N A @' ' =BFC' JB<= 1 =' A' @<G6 ;AD6<' F;<@B61 ' A6EA = F . <=' ' C<' A1@' 9' . A6<I 6< F<' C<' G; G =<@' 6AE' EA=' G<;9<F 6 ' F TA < ' E1 C' C<' F @1 1 =' 9' C<' FCA; <;'N <I<; C<6<==' 1 ' E B6@' CAI< D<< ' E1=<' ' CAI<' AD= A1 <@' 9; .' G;<=< 1 ?' 1 ' C<' GG =1 1 &' EC16= ;<K<F 1 ?' C<' G; K<F &' ;<9B=<@' ' @1=FB==' 1 'N A @' C<' 1 1= ; ' EC1FC' CA@ G;<=< <@' 1 ' F . . 1 <@' C<' 9AB6 ' 9' ' =BGG ; 1 ?' 1 ' A ' C< ;1DB <' ' C<' SAE' EA=' =16< 6 ' ;<K<F <@' ' C1=' @<9<A ' 6<@' ' >#&' B3'<M@') $+<A0 <7K' B3' <M@' M$7C >7<K ' @J , , C<' 9A66' 9' C<' AD1 < &' A @' AC' C<' 1 1= <;=' ?AI<' 1 ' C<1;' ;<=1? A 1 ' a <D' "b

C<' . . < ' AGG<A;<@' ' CAI<' F . <' 9 ;' C<' 9 ; . A 1 ' 9' A' <E' A@ . 10 1= ;A 1 ' B @<;' ' C1<;=' C<' G;1 F1GA6' ;<A= ' EC1FC' CA@' ><G ' C1 . ' A6 9' 9; .' C<' G;<F<@1 ?' 1 1= <;1A6' . D1 A 1 =' ' 6 ?<;' <P1= <@' C<' A==1= A F<' 9' I' ;< FC' A; . ' EA=' ' 6 ?<;' ;<JB1;<@' ' =BGG ; ' C<' F = 1 B 1 A6' FAB=<' 1 ' GA1 ' C<' G;< < @<;' % ' A;6 =& CAI1 ?' D<< ' <PG<66<@' 9; .' CA ' F B ; ' D ' C<' LB<< 3=' <K##1 # 99% ' A; . 1<=& CA@' A>< ' ;<9B?<' 1 ' ;A F<& EC<;<' C<' 0 I<; . < ' ><G ' C1 . ' F 91 <@' 1 ' (B;?<=' ' C1<;=& 9A1 C9B6' ' C1=' F I1F 1 =& CA@' C1 C<; ' . A@<' C<' 1 <; I< 1 ' 9' A' ;< FC' A; . ' 1 ' GA1 ' C<' F @1 1 ' 9' C1=' ;<=B . G 1 ' 9' 991F<' =' C1=' <I< BA61 ' AGG<A;<@' 1 @<91 1 <6 ' A@K B; <@& C<;<' EA=' ' 6 ?<;' A ' =<;1 B=' FAB=<' 9' @1=A?;<<0 . < ' D< E<< ' C<' - 1 ?' A @' ' C1< & EC ' AFF<G <@' C<' G ; 9 61 ' 9' ;<1? ' 99A1;=& A @' EA=' < ;B= <@' ;1 C' C<' 9 ; . A 1 ' 9' A' <E' 1 1= ; ' <' =<6<F <@' A66' C1=' F 66<A?B<=' 9; .' C<' <9 ' < ;<' C<' G ; 9 61 =' 9' SB= 1F<' A @' ;=C1G' E<;<' ?1I< ' ' ' 1I1< & A@?B+C') $+$A<7K ' CA ' 9' C<' <;1 ;' ' R @<' < . B=A & 9' 1 A F<' ' +<6< ' a 9' A' M];<b& A @' 9' +BD61F' = ;BF 1 ' ' ' B=1 ' 0< <;A6' %<=GA = BD1];<=' EA=' . A@<' 1 1= <;' 9' A;& A @' @ . 1;A6' %BG<;;W' ;< A1 <@' C<' G ; 9 61 ' 9' AIA6' 99A1;=' A @' C<' 6 1<=' ' 0B1M & EC ' CA@' 6A <6 ' D<F . <' C<' ;< FC' A . DA==A@ ;' 1 ' @ & G; . 1=<@' C<' AD1 <' C<' =BGG ; ' 9' C1 . =<69' A @' C1=' 9;1< @=& ' F @1 1 ' CA ' ' C1<;=' E B6@' ;<=1? ' A ' 1@<A' 9' <6<F ;A6' ;<9 ; .' ;' 9' C<' @1== 6B 1 ' 9' C<' CA . D<;' C<' A B;A6' < @< F1<=' 9' C<' <E' 1 1= <;=' 6<@' C< . ' EA;@=' C<' <9 & EC16= ' C<' . = ' 1 . G<;1 B=' <F<==1 ' 9 ;F<@' C< . ' ' D<' 6<A?B<@' E1 C' C<' 1?C & A @' C<' ;<=B6 ' EA=' CA ' C<' AD1 <' EA=' @;1I< ' 1 ' A' = A <' 9' B <;'1 <; <==

. ?= ' C<' B=<9B6' 6AE=' EC1FC' 1 ' G;<=< <@' ' C<' CA . D<;=' . A ' D ' . < 1 <@' y C<' <' 9 ;' ;<?B6A 1 ?' A @' @1 . 1 1=C1 ?' C<' G . D<;' 9' C<

C B;= 9 6AD B;' 9 FC16@;< '1 . A B9AF ;1<=(EC1FC EA= GA==<@ 1 C< 9 60 6 E1 ?' <A;' 9;<=C G; K<F 9 C< F I<;=1 9 C< 1I< G<;' < = EA= AFF<G <@ D C< %<GB 1<=(DB ;<K<F <@ D C< +<<;=' C< =A . < =<==1 C1<;= G;<=< <@ A' 6AE' C< DK<F 9 EC1FC EA= C< ;A =9<;'

>S' 3B7'<7>+A3@70' <6< A' ;A F< 9 AG 6< 3= ;<. A1 =' C< 93AG 1<'# `' CA . D<;= ;<F<1I<@ C1= G; G =A6 E C' < CB=1A=. (EC1FC 7>+?@' + ' @ BD 6<==' ?;A 19 1 ?' C< A 1 A6 G;1@<(DB EC1FC EA= . ;< ?< <; B= CA G;B@< C< GA;' 9 C< C<E' I<;<1? (A @ C< @A ?<;= 9 EC1FC E<;< <6 JB< 6 A @ G; GC< 1FA66 G 1 <@ B D A . A; 1 < Y

C< ?61=C 0 I<; . < @1@ 99<;' A D= AF6< C< AFF . G61=C0 . < 9 C1= ?;<A A 1 A6 AF (C< <P<FB 1 9 EC1FC C< - 1 ?' < ;B= <@ < 9 C1= = =(C< +;1 F< @< S 1 I166<(EC ' E ; 6116 9B69166<@ C1= . 1==1 C< ;< . A1 = 9 C< . G<; ;(EC1FC E<;< D; B?C ' +A;1= 1 %<F< . D<;("(1 C< . 1@= 9 A ' 1 . . < =< F F B;=< 9 G< G6<(E<;< @<G =1 <@ E1 C ?;<A G . G A C< V <6 @<= IA61@<= C;<< . C= A9 <;' C< GA==1 ?' 9 C1= 6AEY +;1 F< B1= AG 6< . A@< A 9;<=C A < . G 9 ?A1 G ==<==1 9 C< C; <(EC1FC C< F =1@<;<@ D< C1= D 1 C<;10

NL@C$<$B+ B3 BD$A >LB#@B+ > >$+A< BD#B +@0>D70 @7 $A <7$>#' >+C ?>L<$ $<G ' , /

A F<' C< E 9 (B6 ? < =B; <;' EA= C< C<A ;< 9 C1= <PG<@1 1 (EC1FC EA= <I< ' . ;< A@I< B; B= CA CA EC1FC 9A16<@ A 9;A=DB;?(A @ EA= <JBA66 B =BFF<==9B6 C< G;1 F<(E F< . ;< A G;1= <;(EA= C1= FFA=1 ;1<@ D C< B; 9 +<<;=(F @< . <@ G<;G< BA6 1 . 0 G;1= . < (A @ =CB BG 1 C< 9 ; ;<== 9 A . (EC<;< C< AEA1 <@ E1 C 1 . G<; B;DAD6< F 91@< F< C< 9B6916 . < 9 C1=3G; @1?1 B= @<= 1 1<= <; =<;1 B= <I< = CA@ A>< G6AF< 1 C< F B;=< 9 C1= <A;' 1 GA1 (EC<;< C< AB C ;1 9 C< LB<< <?< (A;1A C;1= 1 A(EA= I<; C; E K@+<A 1 L>$+ #2 +; ?;<==1 1= GA; C< LB<< <?< EA= 9 ;F<@ -<#] &[;1|'[AD@1FA <(A @ 96<@ ;A F<(EC16= A <E 0 I<; . < I<; .< Y3 9# = <= AD91=C<@ 1 A@;1@(B @<;' C< G;<=1@< F 9 0< <;A6 L>7<@7B , / =GA; <; (%B>< 9 1 ;1A(EC EA= = A9 <;EA;@= C1 .

I P D7) $+$A<@7A 0 A>$C <M@ B7><B7 P >AAD7@ DA <M>< <M@ <M7B+@ B3 BD7 +@S ?B+A<$<D1 <$B+>#; B+>7?MK M>A +B<M$+ <B 3@>7 37B ; <M@ L7@A@+?@ B3 AD?M >;<B ; J 37B ; <M$A $; LD#A@ $G@+ JK <M@ ; A@#G@A < <M@ 3@@#$+ A B3 <M@ ; >AA@A 37B ; <M@A@ B7><$B+A <M@A@ L7B?@AA$B+A >+C 37B ; <M@A@ LBA<MD ; BDA ?7BS+$+ A B3 S M><' <M@K ?>## >#@ $<$; >?K ' ' ' D< 3B7 ; K L>7< <#> ; +B<S$<MBD >+N$@<K 3B7 3@>7<M><' >## <M$A S$## ; >Q@ <M@ L@BL#@ <BB $+? +@C <B A>R 6 @MB#C <M@7@ $A +B<M$+ LBLD#>7 JD #B7K <M@7@ $A +B ; B7>#$<K MD< $+ AD??@AA +#K S$+ J><<#@A >+C KBD ; >K ; >Q@ >L#>K<M$+ B3<M@ $+A<$<D<$B+A B3<M@ ?BD+<7K (0

61=C' 1 1= <;' 9' ;<1? ' 99A1;=& 6<9 ' ;A F<' 1 ' C<' = A <& 9' 1= 6A 1 '1 ' EC1FC' =C<' 9 B @' C<;=<69' 1 ' 8"N' A @' =C<' EA=& Q @C' ? @' ;<A= & =<;1 B=6 ' 99< @<@' C<' ;< FC' AD1 <' G; <= <@&& A@@<@' C;<A =' ' 1 % ' . G6A1 =& A @' . A@<' 9 ; . 1@AD6<' G;<GA;A 1 =' 9 ;' EA;& ' EC16= & G< @1 ?' C<' A==< . D6 ' 9' C<' CA . D<;=& EC1FC' E<;< G;< . A B;<6 'F I ><@' 9 ;' C<' . C' 9' F D<;& ; A6' ;@1 A F<=' F;<A <@' A' B . D<;' 9' 9;<=C' ;<?1 . < =& A @' @<F;<<@' CA ' +A;1='=C B6@' D<' 9 ; 191<@' D ' A' F 1 B B=' EA66' A @' A' =<;1<=' 9' @< AFC<@' 9 ; = Y

' C<' . <A 1 . <& C<' G<;1 @' 91P<@' 9 ;' C<' <IAFBA 1 ' 9' ;1A' D ' @1< . < ' CAI1 ?' <6AG=<@' E1 C B ' D;AC1 . 3=' E1 C@;AEA6& A ' ?61=C' =JBA@; ' D . DA;@<@' C<' F1 ' 9' (< ; B & EC1FC' EA=' 1 ' C<' G ==<==1 ' 9' C<' ? G 1A =& A @' C<' @< C; < . < ' 9' <C< . < ' 61' EA=' @<F6A;<@' D ' C<' B6 A ' G ' C1=' C<' ;< FC' O I<; . < ' 1 . . <@1A <6 ' @<F6A;<@' CA ' A ' A < . G ' ' @<G;1I<' C<' +A=CA' 9' ? G ' E B6@' D<' ;<?A;@<@' D ' 1 ' A=' A' =1? A6' 9 ;' EA;& A @' C<' 96<< ' EA=' ;@<;<@' ' G;<GA;<' 9 ;' =A161 ?' C<' =<==1 ' G< <@' 1 ' C<' . 1@=' 9' C<=<' =<;1 B=' <I< =& A @' C<' <PF1 <0 . < ' FAB=<@' D ' A' 9;<=C' A < . G ' ' C<' - 1 ?3=' 619< 6' C<' AD1 <' CA@' 1 =<; <@' 1 ' C<' =G<<FC' ' D<' @<61I<;<@' D ' C<' - 1 ?' 9; .' C<' C; <' = . <' <PG;<==1 =' EC1FC' E<;<' A' =G<F1<=' 9' C;<A ' ;' @<91A F<' ' B; G<N' DB ' ' B1=' +C161GG<& A6 C B?C' 91; . 6 ' ;<= 6I<@' ' ? ' ' EA;' 1 ' FA=<' <C< . < ' =C B6@' D<' A AF><@' 1 ' ? G & C B?C ' 1 ' D< <;' ' A==B . <' A' 6<==' G; I >1 ?' A 1 B@<' 1 ' ;<=G<F ' ' C<' C<;' G E<;=' <' ;<9B=<@' 1<;<' 1 1A1 & ' B=<' C<' 6A ?BA?<' =B??<= <@' ' C1 . ' D ' D1=' 1 1= <;=& A @ >% ' + ' ;<FA66<@' C1=' 96<< & EC1FC' EA=' A6;<A@ ' =A161 ?' 9 ;' ;1A& BG ' I@11FC' C<' AD1 <' ;<=1? <@

' EA=' C<' E1=<=' F B;=<& EC16=' <99<F BA66 ' G; <F6A ?' <C< . < & A @' . A>1 ?' <I<; ' EA;' G;<GA;A 1 ' 9 ;' C<' GB;G =<' 9' @<9< @1 ?' C1 . & ' ' ;< B F<' C<' C G<' 9' A ' C B;AD6<' G<AF<' CA <I<;' ?; B @' C<' ;< FC' O I<; . < ' . 1?C ' CAI<' ' F . G6A1 ' 9' C<' ;<A ' 9' SB6 & EC1FC' ' CA@' D<< ' =1? <@' E1 C B ' 1 =' GA; 1F1GA 1 & A @' EC1FC' @<G;1I<@' C<' +A=CA' 9' ;1A& 1 ' E B6@' CAI<' D<< ' . A@ <==' 9 ;' ;A F<' ' CAI<' G6B ?<@' C<;=<69& 9 ;' C<' =A><' 9' G;<=<;I1 ?' 1 ' ' C1 . & 1 ' A' ?< <;A6' EA;& 1 ' EC1FC' =C<' E B6@' CAI<' D<< ' A6 <' A?A1 = ' A66 ' C<' A 1 A6' G;1@<' 9' ?6A @' CA@

% M@' ?B+A<7D?<$B+' B3' <M@A@' 3B7<A' $+' <M@' @+G$7B+A' B3' >7$A' M>C' J@@+' #B+ ' L7BLBA@C& J#$<' M>C' M$<M@7<B' @+?BD+<@7@C' > ; B+ A<' <M@' L@BL#@' B >7$A' >+C'$+' <M@' M> ; J@7A' <M@' ; BA<' C@'<@7 ; $+@C' BLLBA$<$B+

<' M@' $+ ' S>A' +B<' <BD?M@C ' M@' >AA>AA$+&A' +> ; @' S>A' >++ j A

, 2U0, / T' ') ' . ,

D<< (' 1 ' 1 =' B; (' @<<G6 ' E B @<@' D ' C<' C;<A < 1 ?' 6A ?BA?<' 9' C<' +;<=1@< ' 9' C<' B F16' A @' C1=' D<661F =<' @< . = ;A 1 =(' A @' ' C1<;=' E B6@' CA I<' 9 B @' 1 '@1991FB6 ' ';< ;AF ' ;' = 9 < ' C1=' ' 1;;1 A 1 ?' =G<<FC ' ' EA=' <F<==A; (' CDE<I<;(' A=' A' 91;= 'F @1 1 ' 9' C<' . A1 < A F<' 9' G<AF<(' 1 ' ;@<;' CA ' ;A F<' =C B6@' 6 =<' C1 ?' 9' C<;' @1? 1 (' CA ' A' <E' ;<A ' =C B6@' D<' @;AE ' BG(' 1 ' EC1FC' =C<' =C 16@' D<' A== F1A <@' E1 C' C<' C<;' G E<;=' C1=' EA=' C<' G1 1 ' 9' ' OB1M (' C<' ;< FC' A . DA==A@ ;' 1 ' @ (' A @' C<' EA=' A B;A66 ' < ;B= <@' E1 C' C<' <? 0 1A 1 ' 9'=BFC' A' ;<A ' C<' - 1 ?' AFF<G <@' C<' ;<=1? A 1 ' 9' ' C1<;=' A @' C1=' F 66<A?B<=(' A @' ;A =9<;;<@' C<' G ; 9 61 ' 9' ;<1? ' 99A1;=' ' ' OB1M (' EC .' C<' ;<JB<= <@' ' F . G =<(' 1 ' F F<; ' E1 C' C<' %B><' 9' %A6 . A 1A(' A' <E' 1 1= ; ' CB=' EA=' 9 ; . <@' 1 . @<;' C< G;<=1@< F ' 9' A;=CA6' B6 (' EC 'CA@' C<' G ; 9 C '9 ;' A;(' 1 1= ;' 9' F(C<' AD1 <' 9' C<' ! C' F D<; Y' ' OB1M ' EA=' 1 =' . = '1 96B< 1A6' . < . D<;' <' B6 1 . A <6 'D<FA . <' 1 =' +;<=1@< (' A @' C<' FC1<9' G E<;' @1@' '6<AI<' C1=' CA @=' B 16' C<' < @' 9' C<' ;<1?

B7 ; ><$B+' B3' <M@

I' M@' B<M@7' ; @ ; J@7A' B3' <M@' >J$+@<' S@7@') ') >7<$+ ' SMB' S>A') $+$A<@7' B3' 'DA<$?@' >+C' B7AM$L]' <M@' BD+<' D?M><@# ') $+$A<@7' B3' <M@' +<@7$B7]') ' D ; >++ ' $+>+?@]) ' $##@ ; >$+ ' SMB' M>C' <M@' LB7<3B#$B' B3' DJ#$?' +A<7D?<$B+] C ; $7>#' DL@77C' S>A' <M@' >G>#') $+$A<@7 ') ' D+$+0 ! 7$C>$+@' <M><' B3' 7$?D#<D7@' >+C' B ; ; @7?@ ' >+C') ' @A<@' <M><' B3' DJ#$?' B7QA

+ '

9B-' ;F; 9R[' >1' 9B-' IS ' >@9>0-R' 9;**' 9B-' 2-F-RE*' -*-@9;>F
>1' *' '— ' '

- @ !' " , 8 !' *

+ ' 9' A6< ' A @' 9' ?;<A ' G<;= A6' IA6B<' E<;<' . < . D<;=' 9' C<' <E'
1 1= ; (' C<' 6A=' 9' C<' ;<1? N A @' A6 C B?C' D<6 ?1 ?' ' IA;1 B='
G 61 1FA6' ?; BG=(' C< ' <I<; C<6<==' E ;><@' CA; . 1 B=6 ' ?< C<;(' D<FAB=<'
C< 'E<;<' B A 1 . B='1 ' =BGG ; 1 ?' A' G<AF<' G 61F 'AD; A@(' A @'1 ' 99<;1 ?'
A ' D= 1 A <' ;<=1= A F<' 'A66' G6A =' 9' ;<9 ; .'A 'C . <' C< 'CA@' 'D<A;'
C<' F =<JB< F<=' 9' +A;61A . < A; '1 ;1?B<=(' A @' 61<' <? 1A 1 =' 9' C<'
G;<I1 B=' <A;=(' A=' E<66' A=' C<' D B;@< ' 9' C<' < ; . B=' <PG<@1 B;<' 9' C<'
6A <' AD1 <' EC< '1 ' EA=' G;<GA;1 ?' 9 ;' EA;' C< '9 B @'1 ' C<' @<<G6 '
G;<KB@1F<@' GBD61F' G1 1 ' DB ' 61 6<' ;<=G<F ' ;' = . GA C '9 ;' AB C ;1 (' A'
I<; ' 9<<D6<' F 91@< F<'1 ' C<' . AK ;1 ' ' EC1FC' C< ' ;<= <@' 9 ;' =BGG ; (' A @' A ' <PF<==1I<' =B=F<G 1D161 '1 ' ;<=G<F ' ' <I<; C1 ?' EC1FC' A99<F <@'
C<' A 1 A6' C B;(' ;' C<' ;<6A 1 =' 9' ;A F<' E1 C' C<;' G E<;=' C1='
@1=G =1 1 ' 9' C<' GBD61F' . 1 @' FAB=<@' C<' AD1 <' ' . A><' F . . ' FAB=<'
E1 C' C =<' 9' C<' =<; IA 1I<=(' EC (' EC16=' @<=1;1 ?' C<' . A1 < A F<' 9'
G<AF<(' <I<; C<6<==' @<=1;<@' CA '1 ' =C B6@' D<' A ' A; . <@' G<AF<' ' 'D; B?C '
B7BL@>+' <7@><K' ;A F<' F<' . ;<' 1 ' F . D1 <@' AF 1 ' E1 C' C<' B; G<A '
=SA1;A9; 1 =' G E<;=(' D ' =1? 1 ?' E1 C C<.' A @' B;><' C<' ;<A ' 9' C<'
8 C' SB6 (' (' EC1FC' ;<<= AD61=C<@' <C< . <' 61' 1 ' C<'
C<;<@1 A; ' G ==<==1 ' 9' ? G (' E1 C B ' ;<= ;1 ?' ' C1 .' ;1A(' A @'
EC1FC' F6 =<@' A?A1 =' C<' 96<< =' 9' A66' A 1 =' C<' %A;@A <66<=' A @' C<'
(=GC ;B=' C<' ?;A @' G; K<F ' ;<6A 1I<' ' C<' 9 ; 191FA 1 =' EA='
;<=B . <@' D ' C<' AD1 <' 1 ' C<' =<==1 ' 9' (' A @' =A F 1 <@' D '
C<' CA . D<;=

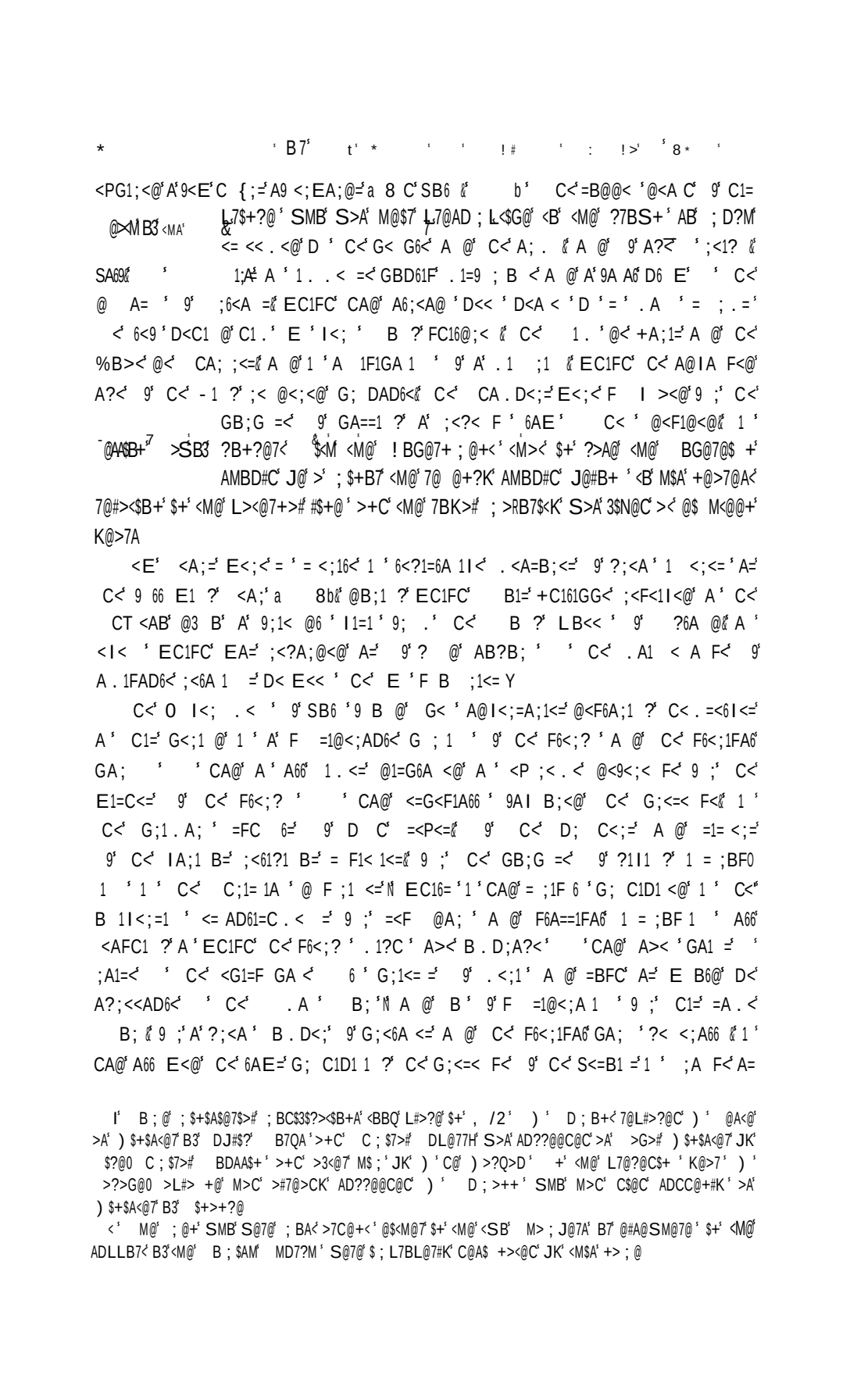
C<' 91;=' <PG< =<=' FAB=<@' D ' C<=<' 1 . . < =<' E ;>=(' A=' E<66' A=' C<'
@<F;<<=' 9' C<' G;<F<@1 ?' <A;(' EC1FC' F;<A <@' <E' ;<?1 . < =Y' A @

I') ' M$@7A' S$AM@C' <M@' A<7@+ <M' B3' <M@' >++K' <B' J@' 7>$A@C' 37B ;' <M7@@' MD+C7@C' >+C'
3$3<K' <MBDA>+C' ; @+' <B' 3$G@' MD+C7@C' <MBDA>+C] >+C' >??B7C$+ ' <B' M$A' G$@S' $<' S>A

6A;?<6 ' AB? . < <@ C . A <;1A6 9 C A; . ;A1=<@ C<Q A . B ' 9 C<
DB@?< ' D ' . ;< CA ' <CB @;<@ A @ =<I< 6 E ' . 1661 =(A @ ;A1=<@
C< ;@1 A; ' A @ <P ;A ;@1 A; ' <PG< =<= ' < C B=A @ E ' CB @;<@
A @ <1?C <1?C ' . 1661 =' Y ' . << ' C<=< C<A I ' FCA;?<= C< 1 1= <;' 9
1 A F<(' B . A (@< . A @<@ A @ D A1 <@ AB C ;1 '
<? 1A < A ' IA;1 B=' G<;1 @=' A' 6 A ' ;<G;<=< 1 ?' A' FAG1 A6 9 +B7 ; B>>
3BD7 MD+C7@C >+C ; $##$B+A ' >+C $< S>A 3BD+C +@?@AA>7K
<B >J>+CB+' 3B7 AB ; @ <$; @ <M@ 'MBL@ B3 @33@?<$+ ' >+' @aD$#$J7$D ; ' J@<S@@+
@NL@+A@A >+C 7@?@$L<A ' M@) $+$A<7K +@ #@?<@C B7 7@R@?<@C >## L7BR@?<A
;<6A 1I< ' 3 C< 1 <; A6 G 61F ' 9 C< >1 ?@ . (DB ' 1 ' G;<=< <@ 1
C1=' A @ C< 9 66 E1 ?' =<==1 ' a (b =<I<;A6 B=<9B6
6AE=' ;<=G<F 1 ?' 61 <;A; ' G; G<; (KB@1F1A6 =A6<=(A @ C @ $A#><$G@
@+>?< ; @+<A
?;<A ' 61 <=' 9 ;A16EA ' . ?=' A66 C< 6AE=' GA==<@ 1
, / ' <M@ ; BA< $; LB7<>+<' $+' $<A' 7@AD#<A' S>A' <M><' SM$?M ?@C@C <B' L7$G><@
< <;G;1=<" C< G;1 F1GA6 ;A16EA =' I<;' C< EC 6< =B;9AF< 9 C< >1 ?@ . &
A @ @1I1@<@ C< <PG< =<=' DW E<< ' C< A < A @ C< IA;1 B=' F . GA 1<=
9 ; . <@ ' E ;>' C< . ' C< AD1 < ' 9A16<@(C E<I<;(
FA6 . ' C< =G1;1 ' 9 A;' A 1 A' M . A K' 1 . G ; A ' F1 1<=(=BFC A=' ! 7@><' C$A<D70
J>B?@A$+<$$@
166<(6<; . (TF (&A @ B6 B=<' E<;< C< =F< <=' 9
=<;1 B=' @1= ;@<;=(A @ GBD61FA 1 =' 9 ?;<A ' I1;B6< F< G; I ><@ @B;1 ?
E ' <A;=' B . <; B=' G; =<FB 1 =' 9 C< <@1 ;=' 9 K B; A6=' A @
E;1 <;=' 9 GA . GC6< =' ' @1 B=' A < . G ' ' A==A==1 A < < 9 C<
- 1 ?3=' = =(C< %B><' @3 B . A6<(' C1=' ;< B; ' 9; . ' A' ?6 ;1 B=' <PG<@1 1 '
1 ' 6?<;1A(9A16<@' 1 '1 =' DK<F (A @ ?A I< ;1=< 'A' @;1 . 1 A6 G; =<FB 1 'D<9 ;<
C< CA . D<;' 9 +<<;=(EC1FC ;<=B6 <@' 1 ' C< F @< . A 1 ' 9 C< E B6@ D<
A==A==1 ' A @ C1=' AFF . G61F<= Y

C< 6<F 1I< CA . D<;' IA=' @1== 6I<@' 1 ' SB <((A @ C< ?< <;A6
<6<F 1 =(?;<A 6 ' 1 96B< F<@ D ' C< AD1 < (;< B; <@' A' <E' CA . D<;(
EC1FC F =1= <@ 9 A6 . =' G;<F1=<6 ' C< =A . < <6< . < =' A=
C<" G;<F<@1 ?' C1=' <A;' EA=' . A;><@ D ' A' F1;FB . = A F< <YFC .C<;<'
A=' 9A A6 A=' 1 . 9 ;<=<< ' C< %B>< @3 ;6<A =(+ ;1 F< A6(<$B+A ' 'D+@ '
D<1 ?' ;B ' AEA ' E1 C D ' C1=' C ;=<=(9<66 EC16=' C; E1 ?'
C1 . =<69 B ' 9 C1=' FA; ;1A?<(CA@ C1=' C<A@ 9;AF B;<@ 1 ' C< 9A66(A @

+@?@AA>7K <B' M>G@ @$ M< MD+C7@C <MBDA>+C B+' <M@ 7B## 3B7 <M@ LD7LBA@ B3 M>G$+ ' 3$G@
MD+C7@C <MBDA>+C 7@>CK <B' <>Q@ <M@ 3$@#C
< ' M@ >AA>AA$+(A +> ; @ S>A * DH+$AA@< ' +' D+3B7<D+><@ ?$7?D ; A<>+?@ $+' 7@AL@?< B3
<M$A' <7$>#' S>A' <M@ ?B+C@ ; +><$B+' B3 >' RBD7+>#$A< JK' <M@ BD7< B3 @@7A ' 3B7 ?B ; L#$?$<K' $+'
?7$; @ B3 SM$?M M@ S>A' @+<$7@#K' $ +B7>+<



A' ;<61?1 P1=' = F1< ' ' =6B . D<; ' (B ' ' <' FAG1 A6' G 1 '1 ' ;<=1= <@' C<' A;@< ' A @' 6<?1 1 . A <' QE1=C<=' 9' C<' F6<;? ' A @' A' B . D<;' 9' G1 B=' 9A . 161<=(' A @' QE1 C B ' A>1 ?' 1 ' AFF B ' C<'9 ; . A6' < ?A?< ' gg . < ' F A1 <@' 1 ' C<' FCA; <;' 9' 8"(' 1 ' . A1 A1 <@' C<' 19<; Y <@BF ' B 1I<;=1 ' . G 6 (' E1 C' C<' AF1 ' A==< ' 9' A' I<; ' 1 96B< 1A6' G ; 1 ' 9' C<' 1D<;A6' GA; (' EC1FC' @;<A@<@' 6<= ' C<' G;1<= =' =C B6@' eA1 ' G ==<==1 ' 9' C<' <@BFA 1 ' 9' C<' B C ' ' OB1M (' (' C E<I<;(' CA@' A6;<A@ ' a1 ' 8*b' G;<=< <@' ' C<' CA . D<;' 9' %<GB 1<=' ' C<' @;A9 ' 9' A' 6AE(' EC1FC('EC16=' G;<=<;I1 ?' C<' B 1I<;=1 '<= AD61=C . < # E B6@' CAI<' A><' AEA '1 =' . G 6 (' A @' FA;;1<@' B (' = '9A;' A=' EA=' C< ' G ==1D6<(' C<' G; . 1=<=' 9' C<' FCA; <;' 6@6 ';<F<1I<@(' C E<I<;(' D ' C<' @<GB 1<=(' EC ' 6 'GA==<@' 1 'A9 <;' 1 ' CA@' B @<;? <' . A ' . @191FA 1 =(' C1=' G; K<F (' EC1FC' EA=' F F<1I<@' 1 ' A' 61D<;A6' =G1;1 (' 9A16<@' ';<AFC' C<' CA . D<;' 9' +<<;=(' 9<66' E1 C' C<' AD1 < (' A @' EA=' 9 ;? < C1=' 1 . G ; A 'JB<= 1 ';<. A1 <@' 1 'AD< A F<' 9 ;' =<I<;A6' <A;=(' DB '1 ' EA=' ;<Q@I<@' QE1 C' . BFC' I1? B;' 1 ' 8(' A @' 9;<<@ .' 9' <@BFA 1 ' EA=' 1 . G<;1 B=6 ' @<. A @<@' D C' 1 ' C<' G;<==' A @' A ' C<' ;1DB <' D ' C<' G E<;0 9B6' A @' GA==1 A <' GA; ' 9' EC1FC' ' @<' A6<. D<; ' EA=(' 1 ' C<' CA . D<;' 9' +<<;=(' C<' . = '<6 JB< ' ;?A ('9;<=C' G; K<F ' E1 C' ;<=G<F ' '=<F @A; '1 = ;BF 1 (' AFF . GA 1<@' D 'A' 6B . 1 B=' <PG ' =1 1 ' 9' C<' ;<A= =' 'EC1FC' 1 'EA=' 9 B @<@(' EA=' G;<=< <@' 0 ' C1=' CA . D<;' 1 ' ' D ' (166<. A1 (' C<' 1 1= <;' 9' +BD61F' = ;BF 1 ' 1=' G; K<F (' F F<1I<@' 1 ' A' =G1;1 ' 9' E1=@ . (' A @' A =E<;1 ?(' AGGA;< 6 (' C<' <F<==1 1<=' 9' C<' . . < (' ?;A <@' ' <I<; ' 1 @1I1@BA6' 9B; 1=C<@' E1 C' A' F<; 191FA <' 9' 91 <==' C<' ;1?C ' 9' G< 1 ?' A' !' . A1 A1 <@' C<' ;1?C ' 9' C<' A <' ' C<' ?< <;A6' =B;I<166A F<' A @' C<' - ' ' !' A @' ;< @<;<@' 1 ' <F<==A; '9 ;' <I<; 'G<;= ' G; 3 G =1 ?' ' G< ' A ' <@BFA 1 A6' <= AD61=C . < ' CA ' C<' =C B6@' . A><' A' G;<610 . 1 A; ' @<F6A;A 1 ' CA ' C<' @1@' ' D<6 ?' ' A ';<61?1 B=' = F1< ' ' 6<?A66 'AB C ;1M<@' C<' G; G =<@' 6AE' <P<. G <@(' A=' @1@' CA ' 9' 8*(' <FF6<0 =1A= 1FA6' =FC 6=' ;' = . A66' =<. 1 A;1<=' 9; .' = . <' 9' C<' F @1 1 =' 1 . G =<@' ' 6A ' <@BFA 1 A6' <= AD61=C . < =' 1 'B @<;E< (' A ' C<' CA @=' 9' C<' F . . 1 <<(' 9' EC1FC' C<' %B><' @<' S; ?61<' EA=' FCA1; . A (' ?;<A ' . @191FA N 1 =(' C<' . = '=<;1 B=' 9' EC1FC' EA=' C<' =BGG;<==1 ' 9' C<' 1 . . B 1 1<=' ?;A <@' ' C<' <FF6<=1A= 1FA6' =FC 6=' A6;<A@ ' <P1= 1 ?(' A @' D<1 ?' GA==<@' 1 ' 611=' A6 <;<@' = A <' D ' C<' +<<;=(' 1 =' <91<F ' EA=' 'FAB=<' 9;<=C' A P1< ' ' C<' 1D<;A6' GA; ' ' C<' =A . <' 1 . <' 1 ' EA=' 911;' 9; .' =A 1=9 1 ?' C<' F6<;? 'A @(

7 * # #)) : !>

C< F6<;1FA6 GA; 'N A @ EC< ' FA;;1<@ @ E ' ' C< CA . D<;' 9 %<GB 1<=1 ' EA= C< =BDK<F ' 9 A 6<A; <@ @1=JB1=1 1 ' D ' ' C1<;=& EC ' EA= C< ;<G ; <;' 9 C< F . .1 << AGG 1 <@ ' <PA . 1 < 1 ' (<9 ;< C< =BDK<F ' EA= @1=FB==<@& C E<I<;& A =<;1 B= 166 <== F . G<66<@ ' 166< . A1 ' ' JB1 ' C< 1 1= ; & 1 ' EC1FC C< EA= =BFF<<@<@ D ' ' @< A6IA @ & A @ C< 6AE 9 9;<< <@BFA 1 ' EA= 1 @<91 1 <6 ' A@K B; <@

' =<;1 B= 1 F1@< & D; B?C ' AD B ' D ' = . < 1 . G ; A ' . < ' 9 C< <?1 1 . 1= ' GA; & FFBG1<@ C< A < 1 ' 9 C< CA . D<;' A ' C< F . 0 . < F< . < ' 9 C< =<==1 ' ' C1= GA; & A= 1 ' C<;=& C<;< E<;< @1= 1 F ' =CA@<= ' . < 9 1 = . < . D<;= E<;< G< 6 ' A661<@ E1 C C< <GBD61FA = 9 ;' C< GB;G =< 9 GG =1 ?' C< <E @ A= N C< ?;<A <;' B . D<;' AEA1 <@ C< G; ?;<== 9 <I< = 1 ' A ;<=<; I<@ A @ @1? 191<@ A 1 B@<& A @ ;<9;A1 <@ 9; .' A>1 ?' A ' AF 1I< GA; '1 ' C< G 61 1F= 9 C< @A 'N A @ A 9<E <A?<;6 ' = B?C '1 ' C< 1 = 1 B 1 = 9 C< F B ; ' C< . <A = 9 I<;0 C; E1 ?' C< 0 I<; . <

C< C G<= 9 C1= GA; 'CA@ D<< ' ;<I1I<@ A9 <;' C< @<A C 9 C< %B><' @3 ;6<A ='N A @ C< 1 . ' @< CA . D ;@&Y CAI1 ?' I1=1 <@ @ ' 1 ' 6<?1 1 . 1= ' .A111' Y#d;< D<FA . <& 1 ' C1= ;<=1@< F< 1 ' (<6?;AI< =JBA;<& DK<F ' 9 A ' < CB=1A= 1F @< . = ;A 1 ' ' C< GA; ' 9 A F; E@ 9 <?1 1 . 1= = EC ' CA@ CA= < <@ 9; .' ;A F< ' GA ' C . A?< ' C1 . ' EC .' C< ' ;<?A;@<@ A @ C B;<@ A= C< ;B< C<1;' ' C< F; E ' 9 CA;6<= : ' ' ;< FC G<<;& ' @< 1FC<61<B& A @ =<I<;A6 %<GB0 1<=& A . ?= ' EC .' EA= ' (<9; <;& E<;< 9 C1= B . D<;& 1 ' =G1 < 9 C< A C C< ' DA@ A>< ' ' - 1 ?' B1= +C161GG<& A @ A== F1A <@ C< . =<6I<= E1 C C1= 1= ' A @ =1? 191FA ' @< . = ;A 1

C< 0 I<; . < ' C B?C ' 1 ' C<1;' @B ' ' F< =B;< C<1;' F @BF ' 1 ' A =< < F< 9 C< =G<<FC 9; .' C< C; < A ' C< F . . < F< . < ' 9 C< <E =<==1 ' C1= =< < F< <PF1 <@ A ' A 1 . A <@ @<DA < 1 ' C< E ' @J><@' B+' <M@' CA . D<;=& A @ <=G<F1A66 '1 ' C< 6<F 1I< CA . D<;& EC<;< FCA . D<;' 9Y'Y A66<?<@ 3A= A ' <PFB=<& 1 ' ;<=G<F ' ' C< A C @LD<$@A ' +H ' A>< ' D ' C1 . ' ' C< - 1 ?' A @ C< FCA; <;' 9 8"& F<; A1 ' ;<=<; IA 1 = 1 ' C1= E ' . 1 @ EC1FC ' . BFC ;<=< . D6<@ C< . < A6 ;<=<; IA 1 = EC1FC CAI< D<< ' = ' . BFC D6A . <@ 1 ' C< FA=< 9 C< . < . D<;= = @@?M B3' ;@<;' ' 0B1M & EC16= ' = ; ?6 ' F< =B;1 ?) ' ! D$VB<' RRR' RRR ' <6 JB< ' ;<G6 & ECA ' CA@ D<< ' @ <& =< ' 9 ; C C<

4' M@ DQ@ C@ B7C@>DN ' <M@ AB+ B3 <M@ DQ@ C@ @77K ' >AA>AA$+><@C $+ , ' >+C 7>+CAB+ B3 <M@ #><@ $+ ' M>C >AAD ; @C <M@ <$<#@ B3 <M@ BD+< C@ M> ; JB7C

G;1 F1G6<' 1I611FC' @1= 1 ?B1=C<@' C<' O I<; . < ' 9' SB6 ' 9; .' CA ' 9' <?10 1 . AF ' [' B;' ? I<; . < &' =A1@' C<' ;A ;& *' 1=' 9 B @<@' ' C<' G;1 0 F1G6<' 9' A' F ;AF ' D< E<< ' C<' G;1 F<' A @' C<' F B ; & A @' ' A' ;<F1G; F1 ' 9' ;1?C =' N EC16= ' C<' G;1 F1G6<' 9' <?1 1 . AF & 9' EC1FC' B' A;<' = ' 9 @& A @' 1 ' C<' A . <' 9' EC1FC' B' CAI<' =G >< ' A @' AF <@' 1 ' (<6?;AI<' =JBA;<& 1=' C<' G;1 F1G6<' CA ' C<;<' 1=' A' ;1?C ' =BG<;1 ;' ' A66' ;1?C =&, #6lA' C<;<' 1=' A' G E<;' EC1FC' FA ' <I<;' D<' @<= ; <@& C E<I<;' 9 61=C6 ' 1 ' . A ' D<' <P<;F1=<@& A @' EC1FC' C<' G< G6<=' A;<' F . G<66<@' ' ;<=G<F & ECA <I<;' 1 ' . A ' @ ' ' ' ' ;' . ' GA; & ' F =1@<;' =BFC' . AP1 . =' ' D<' =CA . <9B6& AD=B;@& A @' @<?;A@1 ?' ' CB . A 1 ' N A @' CA ' EC< ' A ' A < . G ' 1=' . A@<' ' GB ' C< . ' 1 ' G;AF 1F<' A @' ' GB=C' C< . ' ' C<1;' <P ;< . <' F =<JB< F<=&' A' A 1 ' @ <=' E<66' ' ;<<= AD61=C' A ' A ' ;1=>' A @' G<;16& D ' =t . <' C<; 1F' A @' G E<;9B6' AF & 1 =' 9 ;? < ' ;1?C =' A @' 99< @<@' C B;' C1=' 1=' ECA9' E<' @1@' 1 ' 8"& A @' C1=' 1=' ECA ' B' E1=C' B=' ' B @ ' & @A ' CA ' >' G6AF<' C<' C<;' @A ' 1 ' (<6?;AI< =JBA;<' F B6@' CAI<' ' C<;' DK<F ' C<' GA;A?;AGC' EC1FC' 1 ' C<' CA . D<;=3 A@@;<=' ' C<' - 1 ?' F< =B;<@' C<' F @BF ' 9' C<' 1 FB6GA <@' %<GB 1<=& EA=' A@ G <@N A @' C<' 6A <;' 1 . . <@1A <6 ' ;<=1? <@' C<1;' =<A =& DB ' E<;<' ;<<6<F <@

C<' <E' C G<=' 9' C<' <?1 1 . 1= =& = ' G< 6 ' . A 19<= <@' D ' C1=' 1 F1@< & A; B=<@' C<' AGG;<C< =1 =' 9' C<' 1D<;A6=& A @' CA@' = . < C1 ?' ' @ & G; DAD6 & E1 C' C<' F 6@' ;<F<G 1 ' ?1I< ' D ' C<' 6A <;' ' C<' 6AE' G;<=< <@' ' C<' CA . D<;' ' C<' =BDK<F ' 9' =<F @A; ' 1 = ;BF 1 & C<' A@ G 1 ' 9' EC1FC' E B6@' CAI<' ?1I< ' I<;' C<' 1 = ;BF 1 ' 9' A' G ; 1 ' 9' C<' B ?' G< G6<' 9' C<' >1 ?@ .' ' C<' < < . 1<=' 9' C<' O I<; . < ' 9' SB6 ' ' C<' C<;' CA @& C<' I<C< . < F<' E1 C' EC1FC' C<' ?;<A ' =BDK<F ' 9' 9;<<@ .' 1 ' C<' . A <;' 9' <@BFA 1 ' CA@' D<< ' G6<A@<@' D ' 1 =' EA; . <= ' GA; 1=A =& 1 ' C<' B . D<;' 9' EC .' E<;<' . A ' . < . D<;=' 9' C<' <G1=F GAF ' A @' . A ' G;1<= =' A @' 6A . < ' G< 6 ' 9A I B;AD6<' ' C<' S<=B1 =& G; I ><@' A ' 1 <I10 AD6<' ;<AF 1 ' A?A1 = ' C1=' = F1< ' 1 ' C<' F = 1 B 1 A6' GA; & A @';< @<;<@' 1 ' <P ;< . <6 ' A P1 B=' ;<=G<F 1 ?' C<' <?6<F ' 1 ' EC1FC' G?#A<' ' C<' C<' 6AE=' ;<6A 1I<' ' C<' S<=B1 =' CA@' D<< ' A66 E<@' ' 9A66' 1dAE`;]A1 Y?#' f ' C<' 9 66 E1 ?' =<==1 ' a A & 8b& ' C1<;=& EC ' CA@' Y&h' D<F . <' C<' 6<A@<;' 9' C<' GG =1 1 ' 1 ' C<' <9 ' < ;<& @< . A @<@' CA ' A66' < AF . < =' 1 ' <P1= < F<' A?A1 = ' C<' S<=B1 =' =C B6@D<' GB ' 1 9 ;F<N A @' A . <@' E< =<I< ' C B=<=' EC1FC' E<;<' 1 ' C<1;' G ==<==1 ' 1 ' @<91A F<' 9' C<' 6AE=' 9' C<' >1 ?@ .' ' WD<; ' A @' %BG1 & =< 1 ;& = ;< B B=6 ' =BG ' 6h ; <@' C<' A;?B . < =' 9' ' C1<;=& A @' ' @<' A . A; 1 <' FA; ;1<@' C<' =BDK<F

=G1 < 9 C< I<C< . < ' ;< . = ;A F<= 9 C< +; <= A ' . 1==1 A;1<= A @ A . <;FCA ' A . <@ +;1 FCA;@ EC ' EA= C< ?61=C F =B6 ' C< 6A <;' ;<=1? <@ C1= 991F< DB ' F 1 B<@ C1= 1 ;1?B<= _E C C< FC1<9= A @ < @<A0 I B;<@ ' ;A1=< C< F B ; ' < EA= A;;<= <@ A @ GB ' 1 ' = 61 A; ' F 91 < . < ' D ' C< ;< FC AB C ;1 1<= A @ B6 1 . A <6 ' =< ' DAF> ' ?6A @ #C<;< C< ?AIW I< ' ' 6 B@ A @ D1 <;' F . G6A1 = A @@< . A @<@ 9 ;A F< A ' 1 @< . 1 ' 9 ;' C1= F . . <;F1A6 6 ==<= A= E<66 A= 9 ;' C< ;<A . < ' C< CA@ B @<;? < A ' C< CA @= 9 C<;' 991F<;= ' C< . <A 1 . < C E<I<; C< ;< FC 0 I<; . < F =1@<;1 ?' CA ' C< G ==<==1 ' 9 C< F1< ' =6A @= E B6@ D< . BFC . ;< DB;@< = . < CA ' A@IA A?< B= ' ;A F< CA@ @1=AI E<@ C< F @BF ' 9 1 = A@ . 1;A6 1 ' ;<=G<F ' ' C1= . A <; A @ CA@ ;<C 1= <@ 1 = 96A? A ' AC1 1 A= =1 . G6 ' CA ' 9 A G; <F 1 ?' G E<; ' = . ;< I<; C< ?61=C G;<== A @ C< (;1 1=C +A;61A . < ' ;<<FC <@ C< F . G6A1 = 9 C< <P =B6 +;1 FCA;@ C< ;< FC AD1 < EC16< A66 E1 ?' CA ' C<1;' 991F<;= CA@ CA@ A ;1?C ' ' <PG<6 C1 . ' <I<; C<6<== F< =B;<@ C< I1 6< F< E1 C EC1FC C1= <PGB6=1 ' CA@ D<< ' AFF . G61=C<@ A @ @<F1@<@ CA ' A ' 1 @< . 1 ' EA= @B< ' C1 . ' C1= F F<==1 ' ' C< GA; ' 9 C< 0 I<; . < ' A; B=<@ A' I1 6< ' = ; . ' A?A1 = ' 1 C< C< EC 6< 9 C< GG =1 1 ' B 1 1 ?' 1 ' AFFB=1 ?' 1 ' 9 =AF;191F1 ?' C< C B;' 9 ;A F< ' C< ?61=C A661A F< ' C< JB<= 1 ' EA= ;< G< <@ @B;1 ?' C< @1=FB==1 ' 9 C< A@@;<== A ' C< F . . < F< . < ' K&D < ' DH 9 C< 9 66 E1 ?' =<==1 7 A @ ?AI< ;1=< ' C< . = ' = . ' @<DA <= C< 0 I<; . < ' 6 ' D A1 1 ?' 1 ' C< CA . D<;' 9 %<GB 1<= ' C< =BDK<F ' 9 C< 1 @< . 1 ' ' +;1 FCA;@ A . AK ;1 ' 9 <1?C ' I <=

C< ?< <;A6 1;;1 A 1 E' . BFC < I< . <@ D ' G 61 1FA6 GA==1 ' A @ A 1 A6 =B=F<G 1D161 ;< @<;<@ 1 . G ==1D6< C< . A1 < A F< 9 C< ;1?C ' 9 =<A;FC EC1FC CA@ D<< ' ;<F1G; FA66 ' <P<;F1=<@ D ' 'I1; B< 9 6@ ;<A 1<= D ' C< AI1<= 9 ;A F< A @ ?6A @ 9 ;' C< AD 61 1 ' 9 C< =6AI< ;A@< Y ' 0B1M ' CA@ G<;F<1I<@ 1 " ' C< <F<==1 ' 9h?1I1 ?' A ?;<A <;' <P < =1 ' ' C1= ;1?C A @ CA@ <? 1A <@ A' <E ;<A ' ' C< =BDK<F ' E1 C A66 C< ?;<A ' G E<;= ' C< F . G6A1 = C E<I<; EC1FC <;< ;A1=<@ 1 ' ;A F< ' C1= FFA=1 ' E<;< = ' 6 B@ CA ' C< 0 I<; . < ' @1@ ' I< 16;< ' ?1I< ' C1= ;<A ' C< ;A 191FA 1 ' = ' <A?<;6 ' @<=1;<@ D ' ?6A @ ' C< GG =1 1 ' EA= = 166 . ;< I<C< . < ' ' C1= G 1 ' 1 ' 7 A9 <;' C< B 9 ; B A < FFB;;< F<= 1 ' AC1 1 A @ C< ?61=C

kc;!

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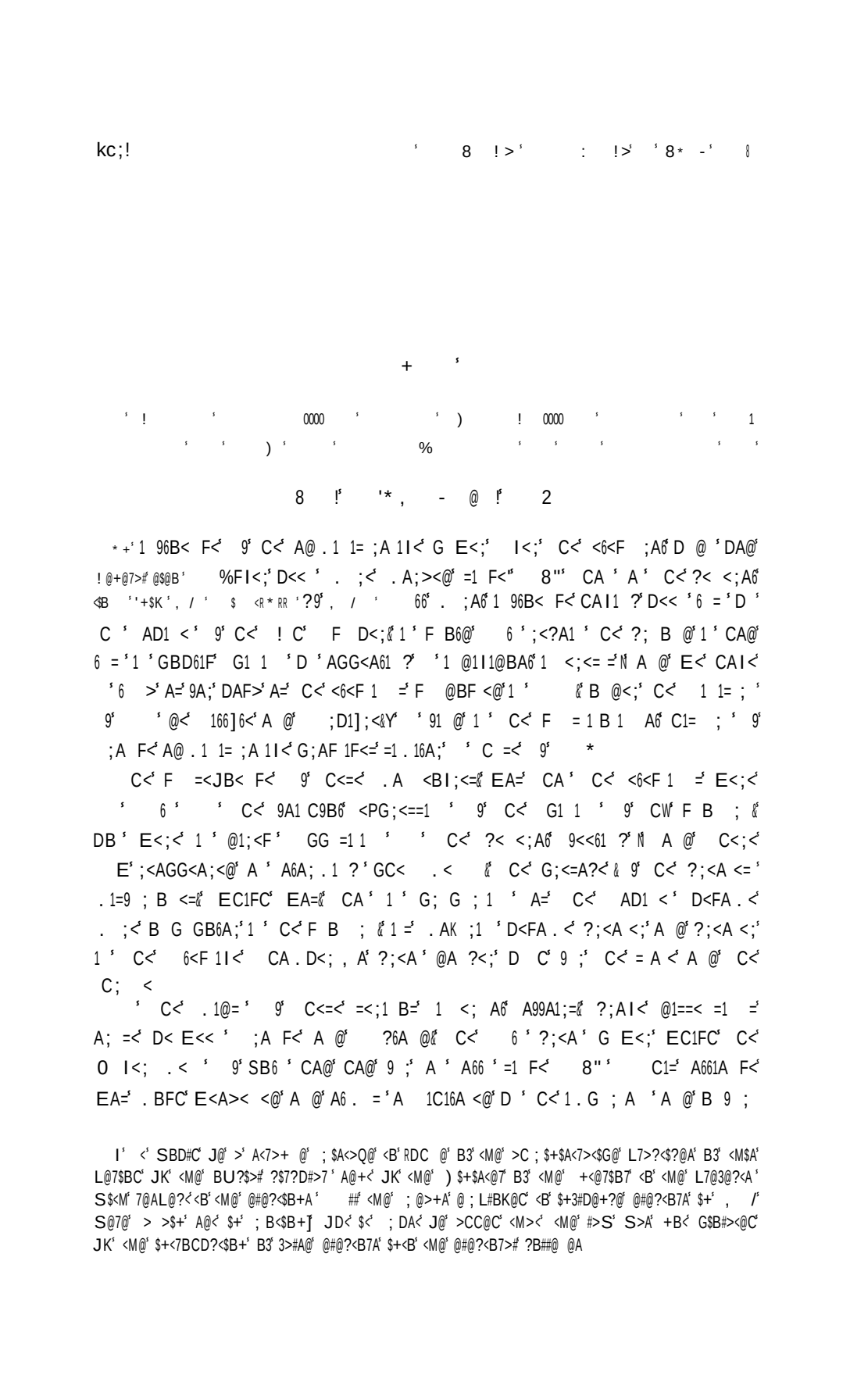

A < A99A1;' > E ' A=' C< GA 1=C . A; ;1A?<=' C< <?< ' =GA; <; ' CA@' 9A66< ' A9 <;' C;<<' <A;=3 . 161 A; ' @<=G 1= . (A @' 1 ' < :' ;' ' CA@' 96<@' 9; .' GA1 (EC1 C<;' C< LB<< . 61<;' CA@' D<< ' ;<FA66<@(A @' EC<;<(1 ' 7(C< ' ; <=' CA@' @<F6A;<@' C<;' @AB?C <;(LB<< ' =AD<66A(9'A?<' C<;< E<;< B . <; B=' A=G1;A =' 9 ;' C< CA @' 9' C1=' G;1 F<==(EC< ' =B@@< 6 (1 ' B?B= (*(B; G< D<A;@' =1 . B6 A <0 B=6 ' 9' C< . A; ;1A?< 9' LB<< ' =AD<66A' ' E1 C' C<;' F B=1 (;A F1=' @3 ==1=< @< (B;D (A @' C< B 1 ' 9' C<;' =1= <;(C< 9A A' % A' B1=A(E1 C' C< %B>< @< G< =1<;(C< 919 C' = ' 9' C< - 1 ?' 9' C< ;< FC ' C<=< E ' . A; ;1A?<=(EC1FC' E<;< A' @ BD6< ?BA;A << 9 ;' C< . A1 < A F< 9' C< ; E ' 9' GA1 ' 1 ' C< B=< 9' (B;D (CA@' D<< ' C< =BDK<F ' 9' G; ;AF <@' <? 1A 1 =' D< E<< ' C< F B; =' 9' ;A F<(GA1 (A @' ?6A @' EC16= ' C< C<A@' 9' C< ?61=C' AD1 < ' EA=' 1;' D<; ' +<<6(A @' ;@' D<;@<< ' EA=' 1 =' 1 1= <;' 9 ;' ;<1? ' 99A1;= ' C1=' AD1 < ' CA@' =<< ' E1 C' . BFC' @1==A 1=9AF 1 ' C< FA @1@A B;< 9' C< %B>< @< G< =1<;' 9 ;' C< CA @' ' 9' C< C<1;<=' G;<=B . G 1I< 9' C< GA 1=C' C; <' C< ;< FC' F . ; (' C< C<;' CA @(CA@' 9<A;<@' CA ' LB<< ' =AD<66A' . 1?C ' . A; ; ' A' G;1 F< 9' C< B=< 9' DB;?(A @' C< ?61=C' 0 I<; . < ' CA@' B @<; A>< (C; B?C' ;@' D<;@<< (' G;<I< ' =BFC' A ' FFB; ;< F<(' F @1 1 ' CA ' C< . A; ;1A?< 9' C< ;< FC' (G;1 F< E1 C' C< 9A A' =C B6@' D< @<6A <@' B 16' C< LB<< ' =C B6@' CAI< A' FC16@ ' C< <? 1A 1 =' ' C1=' =BDK<F ' E<;< = 166' G; F<<@1 ?' EC< ' C< ; ' AD1 < ' EA=' =BFF<<@<@' D ' A' C1?' AD1 < (1 ' EC1FC' C< 1 1= <;' 9 ;' ;<1? ' 99A1;=' EA=' ;@' +A6 . <;= (EC ' @1@' ' A@C<;< ' C< < ?A?< . < ' < <;<@' 1 ' D ' C1=' G;<@<F<== ;(DB ' =A F 1 <@' C< FA @1@A0 B;< 9' C< +;1 F< 9' DB;?' 9 ;' C< LB<< 3=' CA @' C< - 1 ?' 9' C< ;< FC' C< (' B ;<A= AD6 (F =1@<;<@' CA ' C< EA=' ;<61<I<@' 9; .' C1=' G; . 1=<(A @' AB C ;1M<@' C< =1 . B6 A < B=' GBD61FA 1 ' 9' C< E ' . A; ;1A?<=

' ;<F<1I1 ?' C1=' B <PG<F <@' <E=' C< ?61=C' AD1 < ' DB;= ' 9 ; C' 1 ' ;<G; AFC<=' A @' C;<A =(A @' C< . A; ;1A?< 9' C< %B>< @< G< =1<;' IA=' G< 6 ' @< B F<@' 1 ' +A;61A . < ' A=' A' @1=C B;AD6<' AF ' A @' A' @1;<F ' I1 6A 1 ' 9' < 9' C< F6AB=<=' 9' C< ;<A ' 9' ;<FC (EC1FC' @<F6A;<@' CA ' C< F; E =' 9' ;A F< A @' GA1 ' =C B6@' <I<;' ;<= ' G ' C< =A . < C<A@ ' C<=< AFFB=A 1 =' E<;< <I1@< 6 ' 166 9 B @<@(DB ' <I<; C<6<==' 9 B @' A ' <FC ' 1 ' C< E ' ;< FC' CA . D<;=(C< AD1 < ' 9' F D<;' ! C' CAI1 ?' =B >' ' A' @<?;<< 9' B G GB6A;1 ' EC1FC' @1=G =<@' GBD61F

L' L'

G1 1 ' '1 I 6I<'A66'1 =' AF =' 1 ' A ' 1 @1=F;1 . 1 A <' A @'D61 @' F @< . A0 1 ' ' C<' =A . <' 1 . <' 1 ' . B= 'D<' AF> E6<@?<@' CA ' C<" 0 I<; . < ' ;A=C6 '1 . G<;166<@' 9 ;' C<' =A><' 9' A' I<; ' ;< . <' A@IA A?<' A ' A661A F<' ' EC1FC' @<G< @<@' AFF ;@1 ?' ' 1 =' E ' 1@<A' C<' =A9< ' 9' ;A F<' A @' C<' G<AF<' 9' B; G<' C1=' EA=' A' =<;1 B=' 9AB6 ' A @' 1 ' EA=' =<I<;<6 ' ;<G; AFC<@' 9 ;' 1 ' D ' C<' I<; ' G<;= =' EC ' CA@' ;<F< 6 ' AFFB=<@' 1 ' 9' = ;1I1 ?' ' . A1 A1 ' G<AF<' A ' A ' G;1F<' 9 ;' C<' =A><' 9' G;<=<;I1 ?' C1=' A661A F<' C<' 0 I<; . < ' 1 ' EA=' =A1@' A9 <;' CAI1 ?' ;<F< 6 ' 1 ' C<' +;1 FCA;@' A99A1;' =AF;191F<@' C<' C B;' 9' C<' F B ; ' 9 ;' C<' =A><' 9' ;< . A1 1 ?' ' F ;@1A6' <; . =' E1 C' ?6A @' CA@' E' =AF;191F<@' C1=' A661A F<' 9 ;' C<' =A><' 9' @ A= 1F' A@IA A?<=' ;' 1 ' C<;' E ;@=' 9 ;' . <;<' 9A . 16 ' 1 <;<= =

C1=' B 9 ; B A <' . 1=B @<;= A @1 ?' D< E<< ' C<' E ' F B ;1<=' ;< 0 @<;<@' C<' ; C<; ' G E<;=' 6<==' AGG;<C< =1I<' 9' 99< @1 ?

>C' ?B A@aD@+0 B@AB3<J@ L><$$>M' ; >77$> @A '

' C<' ;< FC' 0 I<; . < ' A @' F . G<66<@' C<' 6A <;' ' < <; 1 ' F6 =<;' ;<6A 1 =' E1 C' C< . ' A @' ' F6 =<' 1 =' < <=' ' G; F<<@1 ?=' C<' G 61F ' 9' EC1FC' EA=' 1 ' @1;<F ' GG =1 1 ' ' C<' 61D<;A6' < @< F1<=' A @' = . GA C1<=' 9' C<' A 1 ' C1=' G<;16 B=' = A <' 9' C1 ?=' EA=' A6 . = ' 1 . . <@1A <6 'A9 <; EA;@=' A??;AIA <@' D ' C<' ;B1 ' 9' C<' 6A= ' ;< . A =' 9' + 61=C' A 1 A61 ' ' C<' F6 =<' 9' C<' 1 =B; ;<F 1 ' EC1FC' CA@' DB;= '9 ; C' = . <' <A;=' G;<I1 B=6 '1 ' 0A61F1A' A @' 6<@' ' C<' FFBGA0 1 '1 ' F . . ' 9' C<' F1 ' 9' ;AF E' D ' C<' C;<<' ; C<; ' G' E<;=' C< 6A <;' @1@' ECA ' C< 'CA@' 'C1 C<; ' I< B;<@' ' @ ' A @'

7>?BS';<B' B= ;IA'

B= 13IA' A <P<@' ;AF E' E1 C' C<' A==< ' 9' B==1A' A @ +;B==1A ' +;A F<' A @' ?6A @' G; <= <@' A?A1 =' C1=' G;

F<<@1 ?' DB ' =<GA;A <6 'N A @' D ' ;<9B=1 ?' 'AF '1 ' F F<; ' 1 ' C1=' . A <;' C< ' ;< @<;<@' C<1;' @1==< =1 =' . ;<' AGGA;< ' A @' G; <= <@' 1 ' IA1 ' C<' GG =1 1 ' . A@<' C1=' F1;FB . = A F<' A' ?; B @' 9 ;' ;<@ BD61 ?' 1 =' I1 6< F<' A @' GBD61F' G1 1 'A=' E<66' A=' C<' . = '1 96B< 1A6'K B; A6=' E<;<' B A 1 . B=' 1 ' F @< . 1 ?' C<' 0 I<; . < ' 9 ;' CAI1 ?' 1= 6A <@' ;A F<' 1 ' B; G<' D '1 =' <;; ;=' A @' 9 ;' CAI1 ?' D<< ' A=' 1 . D<F16<' 1 '1 =' . A A?<0 . < ' 9'9 ;<1? ' A=' C . <' A99A1;=

' C<' . <A 1 . <' C<' <F<==1 '9 ;' F<; A1 ' ;<9 ; . =' EA=' = ' ?< <;A66 ' 9<6 ' A @' C<' GBD61F' 9<<61 ?' ' C<' . A <;' EA=' = ' 6 B@6 ' <PG;<==<@' CA ' A' F =1@<;AD6<' G ; 1 ' 9' C<' =<; IA 1I<' @<GB 1<=' EC ' E<;<' @<I <@' ' C<' 0 I<; . < ' 9' SB6 ' G<;F<1I<@' CA ' C<' . . < ' CA@' F . <' 9 ;' . A>1 ?' F<; A1 ' F F<==1 =' A @' E<;<' C< F<9 ; C' @<=1? A <@' A=' =<; IA 1I<

7! $ ')) ' 9 ' ' : !>' $ ' 8 * -' $

<F <@' E1 C' C<' <6<F 1 =' C<' 1 . <' CA=' F . <@' C E<I<;@'' 9 ;' C<' A 1 ' '=CA><' 99' C<' @ BD6<' ><' EC1FC' ;< @<;=' C<' @<GB 1<=' =BD=<; I1< ' ' C<' 1 1= <;=' A @' C<' 1 1= <;=' =BD=<; I1< ' ' C<' @<GB 1<= '' <' F 0 F6B@<@' E1 C' C<=<' E ;@=) , [' ' =A ' ' C<' 1 1= ; @' < <;' ;<= 6B <6 ' ' C<' GA C' 9' E1=<' ;<9 ; . =' B' . A ' 9A66' 9; .' G E<;@' G<;CAG=@' A=' @1@' 1;' D<; ' +<<6@' DB ' D ' < <;1 ?' ' =BFC' A' GA C' 1 ' A' 6A;?<' A @' 61D<;A6' =G1;1 @' A @' D ' ;< @<;1 ?' 1 ' <F<==A; ' 9 ;' B;' =BFF<== ;=' ' 9 66 E' B' BG ' 1 @' B' E166' D<' =<FB;1 ?' B;' E ' ;1B . GCA ' ;< B; ' ' 991F<' C1=' 1=' A' ?6 ;1 B=' . 1==1 @' E ; C ' 9' A66' EC ' ;<G;<=< ' C<' <I 6B 1 ' 9' SB6 @' EC1FC' F;<A <@' B@' A @' A' = = < . ' 9' G 61F ' 9; .' EC1FC' C<;<' E B6@'x;<=B6 ' ' ;A F<' E ' ?;<A ' C1 ?= , #G<AF<' A @' ;@<; `Y

C1=' 1 . . ;A61 ' ' C<' GA;' 9' C<' ;< FC' 0 I<; . < ' EA=' = ' . BFC' C<' . ;<' A= 1=C1 ?' D<FAB=<' 1 ' EA=' 1 ' = ;A ?<' F ;A= ' E1 C' C<' 61D<;A6' . I< . < ' EC1FC' EA=' A ' C1=' 1 . <' A>1 ?' G6AF<' 1 ' A66' C<' . < # #G<@' B ;1<=' 9' B; G<' 0<; . A ' EA=' 1 ' A' = A <' 9' . I< . < N # '_ 1 =' G< G6<' E<;<' A?A1 ' @< . A @1 ?' C<' 9B6916 . < ' 9' C< G; . 1=<=' . A@<' 1 ' 8@' A @' . =' 9' 1 =' = A <=' E<;<' < ?A?<@' 1 ' <= AD61=C0 1 ?' <E' F = 1 B 1 =' 66A @' CA@' 1 ; @BF<@' ?;<A ' . @191FA 1 =' 1 ' 1 =' E N' GA1 @' A ' 6< ? C' GB;191<@@' EA=' A < . G 1 ?@' B @<;' 1 =' B ?' LB<< @' ' < <;' BG ' A' F = 1 B 1 A6' A @' GA;61A . < A; ' F B ;=<N 1 ' A6 ' C<' I< <;AD6<' +1B=' : @' EC ' CA@' D<< ' ;<F< 6 ' <6<IA <@' ' C<' G 191FA6' C; <@' EA=' 1 AB?B;A 1 ?' A' <E' <;A' 9' 61D<; @' A9 <;' CA I1 ?' F . . < F<@' C1=' ;<1? ' D ' A' ?< <;A6' A . <= N =1 . 16A;' ;<9 ; . =' E<;<' D<1 ?' . A@<' 1 ' +1<@ . ' D ' - 1 ?' CA;6<= 6D<; N A @' 0 ;<A ' (;1 A1 ' E' D<?A ' ' 9DAG' C<' 9;B1 =' 9' C<;' ?;<A ' GA;61A . < A; ' ;<9 ; . ' ' C<' 6A <;' F B ; ' A' 6A;?<' G ; 1 ' 9' C<' A;1= F;AF ' ?A I<' A' D6<' <PA . G6<' D ' . A>1 ?' C<' A . <61 ;A 1 ' 9' C<' . A <;1A6' A @' . ;A6' F @1 1 ' 9' C<' E ;>1 ?' F6A==<=' C<' DK<F ' 9' C<1;' = ;< B B=' <99 ; =@' A @' A' @1= 1 ?B1=C<@' 1 1= <;@' 1;

Y' ' AI 1@' ;<G< 1 1 =' 1 ' C<' <P @' ' E166' . < 1 ' 1 ' A' ' C<' G;1 F1GA6' G; G =1 1 =' E611FC' E<;<' A@K B; <@@' ;<=1= <@@' ;' ;<K<F <@' 1 ' C<' F B;=<' 9' C1=' =<==1 ' C<' DK<F =' 9' C<=<' G; G =1 1 =' A @' G; K<F =' E<;<') C<' ;<9 ; .' 9' G;1= =' A @' C<' G< 1 < 1A; ' = = < .' N 9;<<@ .' 1 ' . A <;=' 9' <@BFA 1 @' E611FC' CA@' D<< ' = ' 9 < ' G; . 1=<@' A @ A@K B; <@' N A . <61 ;A 1 ' 9' C<' F =F;1G' 6AE@' ;' D6 @' AP@' = ' DB;@< = . <' D<' G ;N B=<9B6' . <A=B;<=' 9 ;' ;<?B6A 1 ?' C<' ;<6A 1 =' D< E<< ' < . G6 <;=' A @' C<1;' E ;> . < ' N G = A6' ;<9 ; .' N ;<@BF 1 ' 9' C<' AP' ' =A6 ' N ;<@BF 1 ' 9' C<' = A . G' @B 1<=' ' K B; A6=' N C<' <= AD61=C . < ' 9' 1 @1=G< =AD6<' ?BA;A <<=' 9 ;' G<;= A6' 61D<; ' N D<' =BD= 1 B 1 ' 9' A' 6<?A6' 9 ;' A ' A;D1 ;A; ' = = < .' 9' 9 ; . 1 ?' KB; ' 61= =' N C<' @<F6A;A 1 ' 9' C<' ;<=G =1D161 ' 9' ' C<' 1 1= <;=' 9' C<' ; E ' N A @' 91 A66 @' <6<F ;A6' A @' GA;61A0 . < A; ' ;<9 ; .

D<; ' +<<6 E1 C@;A . ?' 9; .' D< ; ' ;' =<; IA 1I< GA; CA@' =<FB;<@' C< ;1B . GC 9' C< F<6<D;A <@' 6<A?B< 9 ; . <@' D ' 1FCA;@' D@< ' 9 ;' C< ;<G<A6 9' C< 6AE=' EC1FC' 9 ;DA@<' 9;<< ;A@< 1 ' F<;<A6=' A @' C<;' 9' C< . ;<' 1 . G ; A 'A; 1F6<=' 9'9 @# ' C< ?< <;A6 <F<==1 ' 9 ;' ;<9 ; .' EA=' 9<6 ' <I< '1 ' C< B;>1=C' < . G1;< A @' C< B6 A ' D@B6 <@K1@' CA@' 9' C1=' E ' AFF ;@' ?;A <@' A' FCA; <;' ' C1=' =BDK<F =

C< = A < 9' B; G< C E<I<;< G;<=< <@' =<;1 B=' @A ?<;=' 9 ;' D<C1 @' C< . < ' EC ' E1=C<@' 9 ;' B=<9B6 ;<9 ; . =' A @'1 @1=G< =AD6< A . <61 ;A 1 =' 1 ' C< 6AE=' C<;< E<;< C<;=' EC ' @<F6A;<@' CA ' C<;< F B6@' D< ' 61D<;A6 G; ?;<==' E1 C B ' C< = = < . A 1F' A @' F . G6< < ;< . @<661 ?' 9' C< EC 6< 9' C< 1 = 1 B 1 =' 9' = F1< ' BFC' E<;<' 1 ' ?6A @' C< CA; 1= =' 1 ' 0<; . A ' C< ;<I 6B 1 A; ' A@1FA6=' 1 ' A6 ' C< AMM1 1A =' ;' @1=0 F1G6<=' 9' AMM1 1' A @' F < . G ;A < B=6 ' E1 C' C<=< C< . < . D<;=' 9' =<F;< ' = F1< 1<=' E<;< DB= ' 1 ' ;A Fw# 1 ' E1 M<;6A @' A @' <I<; EC<;< <6=<' @< . A? ?1= . ' G E<;9B66 ' A1@<@' D ' B 1I<;=A6' =B99;A?<' D<1 ?' A6;<A@ ' ;A . GA '1 ' AB@' (<; <' 0< <IA' A @' =<I<;A6' C<;' E1==' FA =

B1=' +C161GG<3=' 0 I<; . < 'A ' C1=' 1 . <'9 66 E<@' C< G 61F ' EC1FC' CA@' D<< ' 9A A6' ' CA ' 9' C< <= ;A 1 ' D ' F 9 B @1 ?' 1 ' A ' A6 . =' <JBA6' F @< . A 1 ' A66' C< GG < =' 9' C< AD1 < ' E1 C' C< < < . 1<=' 9' C< . A;FC ' ' 9<A;<@' CA ' 19'1 ' . A@<' F F<==1 =' ' C< 9 ; . <;' 1 ' . 1?C ' D< CB; ;1<@' D ' C< 6A <;' 1 ' A' ;<I 6B 1 A; ' F B;=<' A @' 9 ;? ' CA ' G<; 1F1 B=' A @' 9A6=< @ F ;1 <=' @<;1I< C<1;' 9 ;F<' 9; .' C< . 1P B;< 9' ? @' A @' 9' ;B C' EC1FC' 1=' ' D< 9 B @' 1 ' C< . ' CA ' @< . A? ?B<=' A @' A A;FC1= =' 6 ' D<F . < 9 ; . 1@AD6< EC< ' C< GA; 10 =A =' 9' <F<==A; ' ;<9 ; . =' A;< 9 ;F<@' 1 ' 1 . 1 ' E1 C' C< . ' A @' CA ' C< =B;s=' EA ' 9'G I >1 ?' E16@' A @' FB6GAD6< E1=C<=' 1=' ' ;<9B=< A ' =A 1=0 9AF 1 ' ' =<;1 B=' 1 <;<= =' A @' 6<?1 1 . A < @<=1;<=' C1=' G<;=<I<;A F< 1 ' A' G 61F ' 9' ' = ' A ' A' 1 . < EC< ' B; G< ?< <;A66 ' EA=' 1 ' A' = A < 9' . I< . < ' A @' 1 ' C< G;<=< F< 9' B . <; B=' JB<= 1 =' EC1FC' B;?< 6 ' @< . A @<@' = 6B 1 , C1=' @A ?<; B=' D= 1 AF ' A?A1 =' EC1FC' ' 6 ' A' ?;<A ' G ; 1 ' 9' C< =<;IA 1I< GA; 'G; <= <@' DB ' <I< ' C< G;1 F1GA6' ;?A ' 9' C< 0 I<; . < ' A @' C< . ;A6' C<A@' 9' C< 0 I<; . < , A ' 6< ? C' 6<@' C< @1=JB1< <@' A @' A P1 B=' A 1 ' ' 6 >' 9 ;' 1 =' FAB=< 1 ' A' JBA; <;' EC1FC' EA=' C1?C<;' CA ' C< 1 1= ; ' C< G; <F 1 ?' I<16' EC1FC' C< F = 1 B 1 'CA@' @;AE ' A; B @' C< F; E ' CA@' 6 ?' D<< ' 1 ' ;A?=' A @' A ' ' G<;1 @' CA@' C< = I<;<1? ' D<< ' 6<==' =C1<6@<@' D ' C1=' 1 1= <;=' CA ' E

C<' -1 ?'EA='E'?; E1 ?' 6@&'A @'CA@'A A1 <@' CA' A?<'A' EC1FC'A'
.'A 3=' G1 1 =' D<F .<'G<; .A< 6 '91P<@&'A @'A'A' EC1FC
M@LB#$$?>#
?B+CD?<B3'<M@'
$+
C1='K.G;<==1 ='A;<' '6 ?<;'61AD6<' 'FCA ?<&'EC16='C<'
;<.<.D;A F<='9'C1='<A;6' <A;=';<B; ' 'C1='C<A;'E1 C
1 F;<A=<@'9 ;F<' C<'.<. ;1<='9' B1='+C161K1G<'><G Y'C1.'F =A 6
1'.1 @'9'11<'D6 @'<G1= @<='9' C<';<I 6B 1 A1'G<;1 @&'A @'=C E<@
'C1.&'A='EA='A6=' C<'FA=<&'E1 C' CA;6<=': &'A'I1; B B='DB'9<<D6<-1 ?&
6<@' C; B?C' <'F F<==1 'A9 <;' A C<;' ' C<'=FA99 6@&'C1='9A.16
=6AB?C <;<@' ;'1'<P16<&'A @' ;A F<';B1 <@'A @' E1F<'1 IA@<@' C<
C<';<.<.D<;<@' CA'1'9 ;.<;'= ;.'@A ='C<'CA@'C<A;@'C1 1=<69
FA66<@'C<'.A'9'+; I1@< F<'A @'9'@<=1 N'A @'CA'EC<'C<'CA@
;<F<1I<@'C<'F; E'C<'CA@'FA6.<@'C<'<.G<=&';<1 ; @BF<@' ;@<;'A @
G; =G<;1 'E1 C1 'C<'>1 ?@ .&'A @'.A1 A1 <@'G<AF<'AD; A@' <
;<.<.D<;<@' CA' ;A F<'A @'A666' B; G<'DA@'A ;1DB <@' C<=<' ?;<A
;<=B6 =' C1='E1=@ .'A @' C<'1 96<P1D6<';<=1=A F<'.A@<'D'C1=
0; I<; .<' '9AF 1 B='A <.G ='A='E<66'A=' C<'<PA??<;A <@'@<.A @=
9'GA; 1<=&'A @'C<'D<61<I<@' CA'1'EA=' E' <F<==A;' ' F 1 B<'C1=
G 61F &'A @' 'A@C<;<'1'1;;<I FAD6'A @'F =A 6
' C<'<6<IA <@'iGC<;<'1'EC1FC'C<'61I<@&'A @'EC1 C<;'C<';B C'
9 B @'1'@1991FB6' ' A=F< @&' B1='+C161GG<'CA@'9A16<@&'1'F . . 'E1 C'
='.A ' C<;=&' A><'=B961F1< 6'1 'AFF B ' C<'<E' <F<==1 1<='A @'
1 <;<= =' F;<A <@'1'+;A F<'D' C<'G; @1?1 B='=C F>' 9' 8"N' C<'CA@'
9 B @'1'@1991FB6' ' F .G;<C< @' CA &'1' C<'FA=<' 9'. @<; '= F1< &'
C<'6AE' 9'G; ?;<==' 1='1 <P ;AD6<'1'1 ='@<.A @='N'A @'C<'EA=' '.BFC'
@1=G =<@'D'C1='FCA;AF <;&'C1=&;<.<.D;A F<=&'A @'C1=' ; A6'G =1 1 ' '
F 9 B @'6<?1 1.A <'E1=C<='D .' 9';<A6' <F<==1 1<='E1 C' CW'166B=1 =' 9'
GA; 1<='A @' @<.A? ?1F'@<F6A.A 1 ' A1 C9B6&'A'C<'=A.<' 1.<&' 'C1='
E ;@'A @' CW'FCA; <;&'A @'A < 1I<' 'A @'=F;BGB6 B='1'C<'G<;9 ;.A F<'
9'C1='@B 1<='A='A'= I<;<1? &'C<'EA=' '.BFC'1 F61 <@' ';<?A;@' ;A F<'A='
F =1=1 ?'= 6<6' 9'ECA'EA='C< 'FA66<@'[' C<'6 A6'F B ; &'N' 9' CA'61.1<@'
G ; 1 ' 9' C<'F B ; 'EC1FC'EA='A6 <'1'G ==<==1 ' 9'G 61 1FA6';1?C ='N
C<'EA=' '.BFC'1 F61 <@&'A6=&' ';<?A;@'C<'61.1='<=G<F1A66'.A;><@' B'D'
C<'F =1B1 'A='C<' 6'61.1='C1='G<;= A6'AB C ;1 ' C<';B C='
EC1FC'C<';<9B=<@' 'F .G;<C< @' ;' '61= <' ' &'EC1FC'9<66'9; .' C<'61G=' 9'
C1='. ='@<I <@'GA; 1=A ='A @'9; .' C =<' 9'C1='=1= <;'A @' C<'G;1 F<=' 9'
C1='9A.16 &'.1?C'G<;CAG='CAI<'9 B @'AFF<G A F<'E1 C'C1.'19' C<'.<'EC'
E<;<' 991F1A66'C B;<@'E1 C'C1='F 91@< F<'A @'1 I<= <@'E1 C'AB C ;1

, / 0, /5 T' ' ' ') ' 0 ,

CA@' ;<= 6I<@' <1 C<;' ' . A><' C1 . ' 61= < ' ' C< . ' ;' ' ;<=1? ' CA <I<;' ;<= 6B 1 ' C<' - 1 ?' . 1?C ' C< ' CAI<' F . <' ' C<' E B6@' <I<;' CAI<' GG =<@' 66=' = I<;<1? ' . 16' ' ;B C=' CB=' F = 1 B 1 A66 ' <PG;<==<@ ' (B ' C<' CA@' ;<F< 6 'AGG<A6<@' ' C<' 6 A6' F B ; ' A @' 1 ' CA@' ;<G61<@' D '?1I1 ?' ' C1=' AD1 < ' C<' = ; ?<= ' . AK ;1 '1 ' CA@' A=' < # D A1 <@' ' C<' < <=' 9' C<' - 1 ?' C1=' EA=' =B991F1< ' A @' C<' @1@' '1 JB1;<' EC< C<;' C1=' . AK ;1 ' EA=' A' ?< B1 <' <PG;<==1 ' 9' GBD61F' 9<<61 ?' ;' C E' 1 ' CA@' 1==B<@' 9; .' C<' <6<F ;A6' B ; N 9 ;' 1 ' =BGG ; <@' A' 1 1= ; ' EC1FC' EA=' AFF ;@1 ?' ' C1=' C<A; ' A @' 1 ' =<< . <@' ' CAI<' D<< ' D A1 <@' D 'C1=' E 'B 961 FC1 ?' G 61F ' B1=' +C161GG<' F 1 B<@' '9 66 E' C<' G 61F ' EC1FC' C<' F =1@<;<@' 1 9A6 ' CD6<' A @' A@IA F<@' EA;@=' C<' AD ==

=' C1=' G;1 F<' <I<; C<6<==' D=<; I<@' B @<;' <I<; ' F1;FB . = A F<' C<' = ;1F ' 6< <;' 9' C<' F = 1 B 1 ' C<' C B;' 9' CAI1 ?' @ < ' ;< . A1 =' C1=' 1' C1= ; && A6' C B?C' 1' EA=' G E<;6<==' ' >#B+@'7@ALB+'&J$B G;<=<; I<' C1=' C; <' A?A1 =' C<' F B;=<' 9' <I< =' C<' 6<?A6' C<' 1 1= <; H &

;<=G =1D161 ' D<6 ?<@' < 1;<6 ' '5C1=' F B F166 ;=' ' C<' AD1 < ' 9' C<' ! C' F D<;' A @' <=G<F1A66 ' ' C<' @ F ;1 A1;<=' EC ' @B;1 ?' C<' 6A= ' =<I< ' <A;=' CA@' CA@' C<' @1;<F 1 ' 9' C<' C . <' A @' 9 ;<1? ' A91A1;A' 9' ;A F<' 0 @' A6 <' = B @=' CB . A ' C<A; =' A @' <' A6 <' > E=' D ' ECA ' = ;A ?<' 1 9A BA 1 '9 ;' C<' G ==<==1 ' 9' G E<;' ;' D ' ECA ' KB= ' A @' 9 ; . 1@AD6<' AGG;<C< =1 =' C<' - 1 ?3=' F B F166 ;=' E<;<' 1 @BF<@' 'AD= A1 ' 9; .' CAI1 ?' ;<F B;=<' ' C<' 6 ' . <A =' 9' < 61?C < 1 ?' 611 . ' 1 @1FA <@' D ' C<' FCA; <; ' C< ' ;<9B=<@' '@ ' = ' A6 C B?C' IA;1 B=' EA; 1 ?=' E<;<' . ;<' EA 1 ?' ' C< . ' CA ' C<;<' CA@' D<< ' ' C<' . < ' EC . ' E< ' <A;=' D<9 ;<' C< ' CA@' C B;6<@' 9; .' G E<;' C< ' C< . =<6I<=' D<1 ?' A ' CA ' G<;1 @' M<A6 B=' FCA . G1 =' 9' 1D<;A61= . ' A @' A ' C<' C<A@' 9' C<' F = 1 B 1 A6' GG =1 1 ' CA@' I<C< . < 6 ' 6AB@<@' 1 ' B . <; B=' GBD61FA 1 =' C<' 1 = 1 B 1 =' EC1FC' C< ' E' =<< . <@' ' @;<A@' ' CA ' 1 . <' C< ' 1 ' F . . ' E1 C' A66' C<' 9;1< @=' 9' C<' F = 1 B 1 A6' FAB=<' ;<?A;@<@' C<' I<;@1F ' G9' A'KB; ' A=' C<' <;A F<' 9' C<' GBD61F' F =F1< F<' A' 9;<< G;<==' A=' C<' A 1 3=' ?;A @' I 1F<' +A;1=' A=' C<' C<A; ' A @' C<A@' 9' ;A F<' A @' C<' A 1 A6' 0BA;@' A=' ;A F<' 1 =<69N A @' E' C< ' CA@' F . <' ' 9<A;' 1 ' G 61 1FA6' FAB=<' C<' I<;@1F =' 9' KB;1<= , ' =<<' A66' C<' ;?A =' 9' GBD61F' G1 1 ' A66' C<' ?;<A 'K B1 . A6=' E1 C' <' <PF<G 1 ' GG =<@' ' C< . , ' ;<F> ' A . ?=' C<1;' A@I<;=A;1<=' C<' hC S<' 9' C<' @<GB 1<=' =< ' ' C<' 6<F 1I<' CA . D<;' D ' +A;1=' A @' 'D<' A9;A1@' ' A==< . D6<' CA ' A 1 A6' 0BA;@' 'EC1FC' C< ' CA@' C< . =<6I<=' F 91@<@' C<' A 1 A6' 1 = 1 B 1 =' C< 'CA@' A; B=<@' A?A1 =' C<1;' = = < .

‘ $" ‘ k ‘ ‘ 8+ / ‘

1 ‘ C‘ 6<F 1I‘ CA . D<;‘ C‘ <9 ‘ < ;‘ A @‘ C‘ C1;@‘ +A; ‘ C‘ <9 ‘ % A= 1F‘ A @‘ C =‘ 9‘ C‘ 6@‘ A @‘ <E‘ =<; IA 1I<=‘ EC ‘ G<;F<1I<@‘ C‘ <F<==1 ‘ 9‘9 B @1 ?‘ C‘ G 61F ‘ 9‘ C‘ O I<; . < ‘ ‘ 6A;?<;‘ A @‘ . ;‘ 61D<;A6‘ DA=<='N‘ EC16= ‘ A ‘ C‘ =A . ‘ 1 . ‘ C< ‘CA@‘ ‘ < F B <;‘ D<=1@<=‘ C‘ <P ;< . ‘ A @‘ 1; ;<F F16AD6‘ GA; 1<=‘ C‘ . AK ;1 ‘ 9‘ C‘ F6<; ? ‘ A=‘ E<66‘ A=‘ . = ‘ 9‘ C‘ F<6<D;A <@‘ . < ‘ EC ‘ CA@‘ =1 F<;<6 ‘ =<; I<@‘ ;‘ AFF<G <@‘ C‘ <E‘ . A;FC ‘ A @‘ =AE‘ 1 ‘ C‘ 9; ‘ ;A >‘ 9‘ C‘ GA;61A . < A; ‘ GG =1 1 ‘ ‘ C1<;=‘ EC ‘ CA@‘ D<< ‘ = ‘ 6 ?‘ 1 . . IAD6‘ 1 ‘ C‘ G 61F ‘ 9‘ ;<=1= A F<

C16= ‘ C‘ AF 1 ‘ 9‘ C‘ O I<; . < ‘ =<< . <@‘ CB=‘ GA;A6 =<@‘ # ‘ 1 ‘ E<;<‘ E1 C1 ‘ C‘ F 1 . ; ‘ 1 ‘ EA=‘ A6= ‘ G E<;6<==‘ AD; A@‘ 1 ‘ F =<JB< F‘ 9‘ 1 =‘ 9A A6‘ @1==< =1 ‘ E1 C‘ ?6A @‘ ‘ C‘ =BDK<F ‘ 9‘ C‘ GA 1=C‘ . A;0 ;1A?<= ‘ C‘ E ‘ G E<;=‘ E<;<‘ C E<I<;‘ A?;<<@‘ 1 ‘=BGG ; 1 ?‘ 1 ‘+ ; B?A6‘ C‘ C; ‘ 9‘ C‘ . ?‘ LB<< ‘ % A‘ A;1A‘ EC1FC‘ CA@‘ D<< ‘ =CA>< ‘ D ‘ C‘ E 9 6@‘ 1 =B; ;<F 1 ‘ 9‘ C‘ 1?B<61= =‘ A @‘ C‘ 6 ;A A@1FA6‘ GA; ‘ C‘ LB<< ‘ 1 ‘ C1=‘ <P ;< . 1 ‘1 I ><@‘ C‘ A1@‘ 9‘ C‘ G E<;=‘ EC ‘ CA@‘ =1? <@‘ E1 C‘ C<;‘ C‘ ;<A ‘ 9‘ C‘ LBA@;BG6‘ 661A F<‘ <$B+‘ $+‘ B7<D >#‘ ?6A @‘ ;A F<‘ A @‘ GA1 ‘ 1 <;9<;<@‘ A @‘ C‘ C; ‘ 9‘ % A‘ A;1A‘ EA=‘ =AI<@‘ (B ‘ C‘ ;< FC‘ O I<; . < ‘ EA=‘ G E<;6<==‘ 1 ‘ E1 M<;6A @‘ EC<;‘ - A@1FA61= . ‘ CA@‘ I<; C; E ‘ C‘ F 0 = 1 B 1 =‘ 9‘ . A ‘ FA =‘ A @‘ CA@‘ D A1 <@‘ C‘ A=F< @A F ‘ 1 ‘ C‘ %1< ‘ A==< . D6<@‘ A ‘ (<; <‘ C‘ 6A <;‘ CAI1 ?‘ =< ‘ ‘ C‘ FA ‘ 9‘ BF<; ‘ A‘ 9 ; . A6‘ ;@<;‘ 9 ;‘ C‘ <PGB6=1 ‘ 9‘ C‘ S<=B1 =‘ A‘ 6<A?B‘ FA66<@‘ C<

B @<;DB @‘ EA=‘ C< ‘ 9 ; . <@‘ D< E<< ‘ C‘ =<I< ‘ A C 61F‘ M@‘ D+C@ZJD+C‘ #@> D@$+‘ S$<0‘ V@7#>+C‘ , /5‘ FA =‘ 9 ;‘ C‘ GB;G =‘ 9‘ G;‘<=<; I . ?‘ C<1;‘ FA A6‘ AB C ‘ ;1 ‘ A?A1 =‘ C‘ B=B;G<;=‘ 9‘ C‘ 9<@<;A6‘ G E<;‘ A @‘ C‘ %1< & A ‘ C‘ 1 = 1?A 1 ‘ 9‘ C‘ ;<I 6B 1 A; ‘ A @‘ A@1FA6‘ GA; ‘ C;<A < <@‘ ‘ CAI‘ ;<F B;=‘ ‘ 9 ;F‘ 9 ;‘ C‘ GB;G =‘ 9‘ @1== 6I1 ?‘ 1 ‘ ;A F‘ A @‘ C‘ C<;‘ G E<;=‘ 1 <;G =<@‘ D< E<< ‘ C‘ E ‘ GA; 1=‘ A @‘ 99<;<@‘ C<1;‘ . <@1A0 1 ‘N DB ‘ @1991FB6 1<=‘ GB ‘ 9 ;EA;@‘ D ‘ ;@‘ +A6 . <;= ‘ EC ‘ EA=‘ A6EA =‘ <A?<;‘ ‘ <B ;A61M‘ ;< FC‘ 1 96B< F<‘ FAB=<@‘ C1=‘ . <@1A 1 ‘ ‘ 9A16‘ 1 ‘ 1 =‘ DK<F ‘ A @‘ ;< @<;<@‘ 9;B1 6<==‘ A66‘ C‘ <99 ; =‘ 9‘ ;A F‘ ‘ G;<I< ‘ A‘ 9;A ;1F1@A6‘ = ;B??6‘ ‘ 1 =‘ 9; 1<;=‘ C‘ %1< ‘ =< ‘ A‘ 9 ; . 1@AD6‘ A; . ‘ 1 ‘ C‘ 91<6@‘ B @<;‘ C‘ F . . A @‘ 9‘ O< <;A6‘ %B9 B;‘ A @‘ C‘ 6<A?B‘ 9‘ C‘ B @<;DB @‘ EA=‘ 1 ‘ A‘ 9<E‘ E<<>=‘ D; >< ‘ A @‘ @1== 6I<@

5 ‘ F1;FB . = A F‘ = 166‘ . ;‘ 1 KB;1 B=‘ ‘ C‘ 1 96B< F‘ 9‘ ;A F‘ CA@

;<F< 6 ' A>< ' G6AF<' 1 ' A6 ' = 1=C<@' A @' @1= B;D<@' D ' C<' 61D<;A6' ;<9 ; . =' 9' +1B=' : ' 1 ' C<' +AGA6' A <=&' A @' < . D 6@< <@' A6= ' D ' C<' ; G B;<' D< E<< ' ?6A @' A @' ;A F<&' B= ;1A' CA@' < <;<@' C<' G ==<==1 =' 9' C<' 6 ' <<' 9 ;' C<' GB;G =<' 9' G;<=<;I1 ?' C<;' A61A ' G ==<==1 =' 9; .' C<' F A?1 ' 9' 1D<;A61= . ' <;' ; G=' CA@' < <;<@' <;;A;A&' 1 ' =G1 <' 9' C<' < <;?< 1F' G; <= =' 9' C<' FA;@1 A6' C< 6<?A <' a B?B= &' 2b&' A @' C<' FFBGA 1 ' 9' CA ' 9 ; ;<==' D ' C<' B= ;1A =' CA@' CB=' A66' C<' FCA;AF <;1= 1F=' 9' A ' A; . <@' 1 IA=1 Y ;;1 A <@' GBD61F' G1 1 ' A== F1A <@' C1=' 9AF ' E1 C' C<' @<G6 ;AD6<' AF ' D ' EC1FC' C<' ;<GBD61F' 9' ;AF E' CA@' D<< &' 1 ' C<' F B;=<' 9' C<' G;<F<@1 ?' <A;&' A <P<@' ' B= ;1A&' E1 C' C<' F =< ' 9' B==1A' A @' +;B==1A'Ñ A @' 1 ' D1 W;6 ' ;<G; AFC<@' C<' AD1 <' E1 C' 1 =' ADA @ . < ' 9' C<' 61D<;A6' FAB=<' 1 ' B; G<&' E1 C' 1 =' 166' E166' EA;@=' A6 & A @' 1 =' E<A> <==' A @' G E<;6<== <==' 1 ' 1 =' ;<6A 1 =' E1 C' B= ;1A' A @' C<' C<;' ?;<A ' G E<;=' 9' B; G<

BFC' EA=' C<' G =1 1 ' 9'C . <' A @'9 ;<1? ' A9 A1;=' EC< &'1 'F =<JB< F<' 9' C<' ;< 1;< . < ' 9' A;=CA6' B6 &' ' OB1M ' D<FA . <' +;<i@< ' 9' C<' B F16&' <G < . D<;&' 2 ' C<' < . 1 < ' . A ' EC ' CA@ C1 C<; 'D<< ' 6 ' C<' . ;A6'C<A@' 9' C<' AD1 <' E'D<FA . <' = ' = < =1D6 ' A @' ;<A66 ' Ñ A @' C1=' <I< ' EA=' I<; ' 9A1;6 ' ;<0 ?A;@<@' A=' A' G; 9' 9' A' @< <; . 1 A 1 ' ' G<;=1= '1 @<91 1 <6 '1 ' A' G 61F ' C<' B G GB6A;1 ' 9' EC1FC' CA@' E' ;<AFC<@' 1 =' C<1?C #' C<' GG =1 1 ' C< ' @1@' ECA ' CA@' D<< ' @ <' 9 < ' A @' =BFF<==9B66 ' 1 ' A' <1?CD B;1 ?' F B ; ' ' ;?A 1M<@' A ' A?1 A 1 ' C; B?C B ' ;A F<'Ñ 1 =' 9 ;F<=&' F

! D$VB<' ; >C@ 7@A$C@+<' B3' C< >J ; @<

I' ' C>+A@' $+' <M@' <7@><$@A' B3' $@++>' >+<MB7$V@C' DA<7$>' <B' 7@<>$+' >' >77$AB+' $+' @77>7> ' JD<' +B<' <B' A@$V@' $<' JK' 3B7?@' >+C' @A<>J#$AM' M@7A@#3'<M@7@' $+' AL$<@' B3' <M@' LB+<3?>#>D<MB7$<K

< ') >7AM>#' BD#<' DQ@' B3' >#; ><$>' S>A' L7B ; B<@C' <B' <M@' C$ +$<K' B3' ; >7AM>#' @+@7>#

9 ' M@') $+$A<7K' M>C' >#7@>CK' J@@+' @+<$7@#K' 7@ ; BC@##@C ' M@' $+ ' M>C' AD ; ; B+@C' <B' M$A' BD+?$#' AB ; @' ; @+' B3' ; @7$<' SMB' S@7@' >## $+' LBAA@AA$B+' B3'<M@' LDJ#$?' @A<@@ ; ' >+C' 3B7' G>7$BDA' 7@>AB+A' C@A@7G@C' $<') ' HJ@7<' M>C' 7@?@+<#K' AD??@@C@C') ') >7<$+' >A') $+$A<@7' B3' 'DA<$?@' ! @+@7>#' 7@V@#' S>A' ; >C@') $+$A<@7' B3' >7' $+' , /5 ' <M@' DQ@' B3') B+<@J@##B') $+$A<@7' 3B7' >G>#' 33>$7A' >+C') ' '>K7' 7@L#>?@C' >A') $+$A<@7' B3' DJ#$?' B7QA') ' D ; B+' SMB' M$; A@#3' AD??@@C@C') ' >?>G@0 >L#> +@' >A') $+$A<@7' B3' $+>+?@' 3' >## <M@' ; @ ; J@7A' B3' <M@' >J$+@<' IB3' ?<BJ@7' , / ' <M@7@' B+#K' 7@ ; >$+@C' <M7@@') ' ++$+0' ! 7$C>$+') $+$A<@7' B3' 7$?D#<D7@' >+C' B ; ; @7?@' ySMB' ?B+3$+@C' M$; A@#3' @N?#DA$G@#K' <B' <M@' C@<>$#A0B3' M$A' C@L>7< ; @+<^')) ' ! D$VB<' >+C' D?Mm<@#' $+' SMB ; ' S@7}' L@7AB+$3$@C' CD7$+ ' A@G@+' K@>7A' <M@' LB#$<$?>#<@+C@+?$@A' B3' <M@' >J$+@<

E166 A @ 1; ;1 A 1 C< I <= 9 C< . AK ;1 9 C< 6<F 1I< CA . D<; CA@ @1= . 1==<@ A 6A;?< B . D<; 9 F . G6A1 = ;<=G<F 1 ?

C< <6<F 1 <<;1 ?. A BI;<= C< ADB=< 9 . 1 1= <;1A6 9 ; I .A< B 9AI B;A @ 9 GA;61A . < A; 1 96B< F< DB C< CA@

FA; ;1<@ F I1F 1 C< GBD61F . 1 @ A 9AF = E<;< . A@< . A 19<= EC16= C< C<;CA @ IA;1 B= 1 JB1;1<= 9 ;F<@ + D C< GBD61F

B F; B I<16<@ 1 = . < 9 C< 991F<= B @<;C< 1 1= <;= 9 A;A @

A;1 <F =1@<;AD6< 9;AB@= F . . 1 <@ C< ?;<A 1 KB; 9 C< = A <

D =BDA6 <; A?< = 9 C =< 1 G E<; Y C<=< ;<I<6A 1 =?;AI< W B?C

1 C< . =<6I<= G; I<@ DB C< G;<6B@< = 166 ?;<A <;=FA @A6= E

G<<;= 9 ;A F<b C<= < A @ %<=GA = @< BD1];<= D C 9 C< .

9 ; . <;6 1 1= <;= A @ 166 ;<F< 6 . < . D<;= 9 C< AD1 < Z E<;< @<0

B F<@ E1 C C<1;AFF . G F<= A @ =< ;1A6 C<9 ; . <;9 ;;<F<1I1 ?

D;1D<= 1 C< <P<;F1=< 9 C1= @B 1<= C< =<F @ 9 ;CAI1 ?9AF161 A <@ C<

F F<==1 9 A . 1 < D . <A = 9 F ; ;BG 1 <P<;F1=<@ A 1 1= <; 9

A < C< B; 9 +<<;= @1@ =C;1 >9; .< C<1;@B A @ G; B F<@

C< . D C ?B16 = <= <D<9 ;< KB@? . < EA= ?1I< A < . G <@

F . . 1 =B1F1@< C<;=B1F1@< C< FAB=< 9 EC1FC EA= B > E CA

9 B (;<== B;A . DA==A@ ;A AG6<= EA= C< DK<F 9 = ;A ?<

A @ . = <;1 B= F . . < A;1<= EC< 1 C< C1?C<= ?;A@< 9 = F1< A

F;1 . <B C<A;@ 9 A @ 9;1?C 9B6 9; M< C< GBD61F E1 C = BG<9AF 1 A @

C ; ; ; C< %BFC<==@< +;A=61 @AB?C <; 9 A;=CA6 <DA= 1 1 EA= #

9 B @ @<A@ . B;@<;<@ 1 C< . = DA;DA; B= . A <; C< . B;@<;<;

EA= C<; CB=DA @ IC ;G;<I< <@ C1= A;;<= D G 1= 1 ?C1 . =<69 <I<;

1 C< @A = 9 GA?A A 1JB1 E<;< C< 9A66 A @ D=<JB1<= 9 < . G1;<=

G;<=A?<@ D . ;< B . <; B= A @ . ;< =1 1= <; . < = CA AGG<A;<@ 1

;A F< A C< AGG; AFC 9 C< <A; 66 C<=< 9AF = . A@< A @<<G

A @ ;< . A;>AD6< 1 . G;<==1 F C< 6AD B;1 ?F6A==<= C<=<= . BFC

<?6<F <@ D C< ?;<A GBD61F G E<;=S A @ @<F<1I<@ A9 <; FHIG! C<1;

I M@) $+$A<@7A B3 >7 >+C B3) >7$+@ S@7@ <M@+)) B#$+@ C@ >$+<0 B+ >+C)) >?Q>D M@$7 M$ M L7BJ$<K AM@#<@7@C <M@ ; 37B ; >## ADAL$?$B+ JD< <M@$7 ?B+3$C@+?@ M>C J@@+ >JDA@C >+C <M@K S@7@ 7@ALB+A$J#@ #$@K ?B+A$C@7@C $< <M@$7 3D<K <B A@+C $+ <M@$7 7@A$ +><$B+A >+C <M@K S@7@ AD??@@C@C JK) 7?V@# >+C) C@) B+<@J@##B

/) @A<@ M>C J@@+) $+$A<@7 B30 DJ#$?7 B7QA >+C B3 'DA<$?@ >+C) @AL>+A C@ DJ$C7@) $+$0A<@7 B3 >7

< 3 >+K B+@ CBDJ<A <M$A #@< M$; A@@ >## <M>< M>A J@@+ CB+@ $+ + #>+C <B > ; @#$B7><@ <M@ ?B+C$<$B+ B3 <M@ +D ; @7BDA ?#>AA@A CD+$+ <M@ #>A< M>#3 @+@7><$B+ >+C S$<MBD<

6<?1 ;AA <C G<=& ;<F<1I<@E1 C A I1@1 1 B . <;AD6<G; @BF 1 =& 61 <;A; & <F . 1F& A @C1= ;1FA6& 1 EC1FC = F1< A 6A;?<EA= C<6@ BG 1 C< . = 6B@1F; B= F 6 B;= C<1;CA ;<@A @F < . G C<=<=B99<;1 ?F6A==<=& 1;;1 A <@A @@<G;1I<@ 9A66 1 = ;BF 1 & 99<;<@A6= 1 A6 . = A66FA=<= A <A= G;1M< C< <E C< ;1= =& =BFF<== ;= 9 A1 1 . & 9B;1<;& 9 (AD B9 C< 1 P1FA <@ C< . =<6I<= E1 C C< G 1= 9C< = F1A61= =& E1 C GA;A@ P1FA6 @ F ;1 <= =BDI<;=1I< 9 ;<61?1 & 9 9A . 16 1<=& 9 G; G<; & @<= ;BF 1I< A 6< ? C 9 61D<; 1 =<69N A @ 1 C<1;B > E CAB = C< =<F;< = F1< 1<=# F . G;<==<@ A @F JB<;<@ DB @<= ; <@& = 166 F B <@ B . <; B= ;<F;B1 = JB1I<;1 ?E1 C GA==1 &x 1 C I< ?<A F<& A @E1 C 6B=

>J#$??>#> ; $<$@A

? ;<A =FA @A6= E<;< C< A@@<@ ?;<A . 1=9 ; 1 . <=N C<G<; B;DA0 1 = D; B?C 1 F . . <;F1A6 A99A1;= 1 C< ;A1 9 C< ; BD6<= 9 C< E G;<F<@1 ?<A;=<A @ = 166 . ;< C<1 . D;1@6<@ ADB=< G9 =G<FB6A 1 A @ C< 9<I<;9 = F>K DD1 ?& CA@ FAB=<@1 e ;A >= B . D<;6<==9A16B;<= C< I<; <6< . < = =<< . <@ E D<FCA;?<@E1 C CB . A GA==1 =& 1 F;<A=< C< GBD61F . 1=<;1<= <; 9;<JB< F 96A?;A 1 = A C< < @ 9 C< G;<F<@1 ?;<1? @<= 6A <@ B;91<6@=& A @ <I<;CA@ = . A =C1G I;<F>= =CA <;<@ C< ;A@< A @ C<=C1GG1 ?9 ;A F< A= 1 CA 9A A6 <A; 2 C< 1 1= ; & A= 9 < CAGG< = A9 <;A 6 ?A @ B G GB6A; G ==<==1 9 G E<;& EA= . A@< ;<0 =G =1D6<9 ;1 = E G E<;6<== <==A @ C< . 1=FA;;1A?< 9 1 = D<= 1 < 0 1 =& A @ C< I<; E<AG = 1 CA@ FA66<@ 1 <P1= < F< E<;< E B=<@A?A1 = 1 =<69N A @ 1 " =G1 < 9 C< . AK ;1 C< CA@ F;<A <@& C< 1 1= <;=& GA; 1FB6A;6 C =< EC G<;= 191<@ C< G 61 1F= 9 C< AD1 < & < F B <;<@ A GG =1 1 = . BFC C< . ;< I1 6< A @ G1 16<== CA C< & EC< 1 GG =1 1 & E<;< <PAF 1 ?A @ 1 . G6AFAD6<& A @ CA@ E =C 'I . C< . =<6I<= 1 FAGAD6< 9@ 1 ? C<; ;D< <; CA C<1; GG < = I A1 B; IA61A A; . 1 9;1FA C;<E A 6A= 6B= ;< BG C< ;<1? N 1

>J ; $A+B+' B3' JC0@#0 >C@7

CA@ =BD@B<@ C< - AD 6<= A @ @;1I< C< . 1; C1= 6A= ;< ;<A D@ <6 - A@<;; =B;;< @<;<@ A . ;1F1];<& CB= D;1661A 6 1 AB?B;A 1 ? C< %B><@3 B . A6<3= ? I<; . < 9 6?<;1A (B A C1= <G FC& A6A= & A= B @<; CA;6<= : & A9 <; C< F JB<= 9 6?<;1A& C< F B ; =C E<@ 1 =<69 DB 61 6< BFC<@ D A ?6 ; 9 EC1FC

? 1 ? A= 9A; A= C1=& A @ E1 C B 6<AI1 ? ;A F<& 6< C1 . 6<A; A66 C< 6<?1=6A 1I< . <A=B;<= A@ G <@ D B= @B;1 ? C< GA= 919 << <A;= 1 C< 1 <;<= 9 C< E ;>1 ? G GB6A 1

1=1< 1=11 ^) (' 0 0 *"2

= . < GA; ' ;<@ B @<@' ' A ' B G GB6A;' 1 1= ; (' EC1FC(' D ' C 6@1 ?' ' ' G E<;' A9 <;' C< G1 1 ' 9' C< F B ; ' EA=' A?A1 = ' 1 (' CA@' 1 0 96A . <@(' = ;< ? C< <@(' A @' ;A661<@' A?A1 = '1 =<69' C<' < 1;< GG =1 1 ' B 1 <@' A ' C< B . <; B=' DA JB< =' EC1FC' A?1 A <@' ;A F<' 1 ' C< A . < 9' GA;61A0 . < A; ' A @' <6<F ;A6' ;<9 ; . ' BFC' E<;< C< <I< =' 9 ;<;B 1 ?' C< 6<?1=6A 1I< =<==1 ' 9' (' C< 6A= ' 9' C< ;<1?

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8 m @ !

= 3 ' ,' / + ') '

1 ?' C<' <6<F ;A6' 6AE' A @' C<' JBA6191FA 1 ' 9 ;' FA @1@A <=' 9 ;' C<' CA . D<1" 9'%<GB 1<= Y' . G < ' ' ?A1 ' C<' GBD61F' I <' 9 ;' C1 . =<69%' C<' @1=@A1 <@' 1 %' C<' D;AI<@' 1 N' A @' EC16<' C<' = ; . ' EA=' ?; E61 ?' 9; .' <I<; ' G 1 ' 9' C<' G 61 1F=16' C ;1M %' C<' AD1 <' G;<=< <@' 1 =<69' D<9 ;< C<' ;< A==< . D6<@' CA . D<;=' E1 C' 1 =' C<A@' <;<F ' A @' D 6@%' A @' E1 C' @<A C' A ' 1 =' ; =

' AFF<6<;A <@' C<' < . G<=' D ' 1 =<; 1 ?' A ' C<' F . . < F< . < ' 9' C<' =<==1 ' 1 ' C<' A@@;<==' ' C<' C; <%' A9 <;' = . < G; . 1=<=' 9' G; ?;<==1I<' A . <61 ;A 1 =%' A ' 1 . G;B@< ' GC;A=<%' D ' EC1FC' C<' GG =1 1 ' F =1@<;<@' CA ' A66' C<' GG < =' 9' C<' A@ . 1 1= ;A 1 ' E<;<' AFFB=<@' 9' FC<;1=C0 1 ?' D61 @' ;' ?B16 ' GA==1 =%' A @' E<;<' = 1? . A 1M<@' A=' < < . 1<=' ' C<' . A;FC ' C<' @1 AE1 ?' BG' 9' C<' A@@;<==' 1 ' A =E<;' ' C1=' =G<<FC' ?AI<' ;1=<' ' A' @1=FB==1 ' 1 ' C<' E ' CA . D<;=' EC1FC' EA=' ;< @<;<@' = 6< . ' D ' C<' =<;1 B=' G =1 1 ' 9' A19A1;=' C<' G;1 F1GA6' 1 <;<=' 9' C<' @<DA <' 1 ' C<' CA . D<;' 9' +<<;=' EA=' F< ;<@' 1 ' C<' 9 ;<1? ' G 61F ' 9' C<' AD1 < %' EC1FC' EA=' AFFB=<@' 9' CAI1 ?' @1=G6A <@%' 1 ' C<' B7@$ +' LB#$?R =G<<FC' 9; .' C<' C; <%' ' . BFC' @<9<;< F<' 9 ;' B= ;1A%' D ' ;< . A1 1 ?' =16< ' E1 C' ;<=G<F ' ' C<' ;<9 ; . =' G; . 1=<@' D ' + G<' +1B=' : ' A @' = . < C<;' 9' C<' A61A ' G;1 F<=' ' OB1M ' ;<G61<@' ' C1=' ;<G; AFC' D 5 GA 1 ?' C . A?<' ' C<' <99 ; =' 9' 1;<' 6 ' A C<;%' EC16=' A ' C<' =A . <' 1 . < C<' G 1 <@' B ' C<' @A ?<;' 9' <PF1 1 ?' C<' ;<I 6B 1 A; ' GA==1 =' A6;<A@ ' ' . BFC' 1 96A . <@' 1 ' A6 %' EC<;<' @< . A? ?1= . %' ;A661<@' B @<;' AMM1 13=' 96A?%' C;<A < <@%' A=' B=BA6%' 1 ' F . G; . 1=<%' D ' 6A . < AD6<' <PF<==<=%' C<' ;<9 ; . =' A6;<A@ ' <99<F <@' ;' G; K<F <@

C<' %B><' @<' (; ?61<' @<9< @<@' C<' G 61F ' 9' C<' 1 1= ; ' ' C<' E1==' JB<= 1 ' <' @;< I' A' ?6 . ' G1F B;<' 9' C<' G; ?;<==' 9' A@1FA61= . ' 1 ' . A ' 9' C<' E1==' FA =%' 1 ' EC1FC' 1 ' CA@' D<< ' ;< @<;<@' ;1B . GCA ' D ' I1 6< ' ;<I 6B 1 =' A @' C<' ;<F< ' I1F ; ' D A1 <@' D ' C<' A; . =' 9' C<

I' 3' <M@A@' <SB' 7@3B7 ; A ' <M@' A@?B+C ' 7@#><$G@' <B' <M@' $+?B ; L><$J$#$<K' J@<S@@+' <M@' CD<$@A' B3' C@LD<K' >+C' ; >+K' LG$J#$?' >+C' A>#>7$@C' B33$?@A ' A@@ ; @C' <B' >## <M@' ; BA<' D7 @+<' +' @#@?<B7>#' 7@3B7 ;' BL$+$B+A' S@7@' G@7K' CGC@C ' ??B7C$+ ' <B' <M@' ; BA<' @+@7>#' @NL7@AA$B+' B3' BL$+$B+' <M$A' AMBD#C' M>G@' ?B+A$A<@C' $+' >C ; $<<$+ ' >A' @#@?<B7A' >## ?$<$V@+A' SMBA@' +> ; @A' >LL@>7@C' B+' <M@'RD7K' #$A<AR' >+C' JK' ?B+A@aD@+?@ >## <MBA@' SMB' M@#C' >+K' LDJ#$?' @ ; L#BK ; @+<' B7' SMB' M>C' <>Q@+' <#$@$7' 7>C@A' $+' <M@' #$J@7>#' L7B3@AA$B+A ' >+C' <MBA@' C@A$ +><@C' D+C@7' <M@' +> ; @' B3' - - / ' +' <M@' B<#$@7' M>+C ' JK' <M@' @ $<$; $A<' >7<K' >+C' <M@' M$7C' >7<K ' $<' S>A' AD @A<@C' <B' $G@' <M@' 7$ M<' B3' <M@' AD3 7> @' <B' >## @$<$V@+A' $+A?7$J@C' B+' <M@' 7B## B3' C$7@?<' <>N><$B+ ' ?B ; J$+$+ ' <M$A' ; BC@' B3' @#@?<$B+' S$<M I' 4 9/ - ' ' f' ' ' > ; ' $+?#$+@C' <B' J@#$@G@' <M><' $3' AB ; @' AD?M' 7@3B7 ; ' M>C' J@@+ @33@?<@C' D+C@7' $+ ' BD$A' M$#$LL@ ' 7>+?@' SBD#C' M>G@' J@@D' AL>7@C' <M@' ?><>A<7BLM@' B3

* ") #3 ' ' e' ' : !>' $ ' 8 * - ' $#$

%1< ' I<;' C<' 6<A?B<' 9' C<' B @<;DB @ ' <' =G ><' 9' C1=' EA;(' B @<; ' #A>< ' ' C<' G;< <P ' 9' <PG<661 ?' C<' S<=B1 =' 9; .' C<' A C 61F' FA =(' A=' A ' 1 . G1 B=' EA;(' =BDI<;=1I<' 9' C<' FA A6' ;1?C =' A @' 1 @<G< @< F<(' I @' A=' F ;A; ' ' 61D<; ' A=' 'KB= 1F<' <' <P 66<@' C<' <99 ; =' . A@<' D ' C<' AD1 <' ' G;<I< (' 1 (' A @' <PG;<==<@' I<C< . < ';<?;< =' CA ' 1 ' CA@' ' D<< ' G;<I< <@' D ' C<' . <@1A 1 ' 9' ;A F<' A @' C<' C<;' B; G<A ' G E<;=

C<=<' ?;<A ' JB<= 1 =' E<;<' @1=FB==<@' E1 C' <I< ' . ;<' 9 ;F<' A @' I<C< ' 1] F<' 1 ' C<' @<DA <' ' C<' A@@;<==' EC1FC' >' G6AF<' 1 ' C<' 6<F 1I<' 61A . D<; ' A ' 9' C<' . = ' < . 1 < ' ;A ;=(' 1 F6B@1 ?' ' @<' A . A;0 1 <(' @166 ' (A;; (' A @' C1<;=(' @< B F<@' C<' AD1 <' ' C<' F B ; ' A=' ?B16 ' 9' CA I 1 ?' =AF;191F<@' ' B= ;1A' C<' 61D<;A6' FAB=<' 1 ' + 6A @(' A6 (' i @' E1 M<;6AB@' ' OB1M ' CA@' ;<F B;=<(' 1 'C1=' @<9< F<(' ' C<' G;1 F1GA6' I;?B . < =' A6;<A@ ' G; @BF<@' 1 ' C<' CA . D<;' 9' +<<;=(' A @' G; @BF<@' G; 9=' CA (' 1 ' ;<=G<F ' ' + 6A @(' C1=' E1=C<=' CA@' D<< ' I<;;B6<@' D ' C<' 9 ;F<' 9' F1;FB . = A F<=(' A @' CA ' 1 ' A6 ' A @' E1 M<;6A @' C<' CA@' @<9< @<@' ;<A66 ' 61D<;A6' 1 <;<= =N' DB ' A@@<@' CA ' C<' F B6@' ' D6A . <' B= ;1A' 9 ;' GG =1 ?' C< ;A=C' A @' @A ?<; B=' A < . G =' 9' C<' ;<I 6B 1 A; ' A@10 FA6=' 1 A66 (' C<' I<; ' =>169B66 ' GB ' ' C1<;=' 1 ' A A? 1= . ' E1 C' C1 . =<69(' D ' ;< . 1 @1 ?' C<' CA . < ' 9' C<' AF =' 9' C1=' 1 1= ; ' 1 ' 8*(' A @' C1=' 9 ; . A6' ;@<;=' 9 ;' C<' <PGB6=1 ' 9' C =<' EC .' C<' E' G; <F <@' <' A=' 6<==' CAGG (' C E<I<;(' EC< RC<' F < @<@' CA ' C<' GA 1=C' . A;;1A?<=' CA@QF . GY<66< ' ;A F<' ' = ;< ? C< ' C<;' A661A F<' E1 C' C<' G E<;=' 9' C]' ; C(' A @'(' A66 E' C< . " ' A==B . <' A' E1@<;' 1 96B< F<' 1 ' C<' G 61F ' 9' B; G<' 3

C<' 1 1= ; ' @1=G6A <@' = 166' ?;<A <;' E<A> <==' EC< ' 1 ' 'A < . G <@' ' ;<DB ' C<' ;<G; AFC' 9' <6<F ;A6' F ;;BG 1 ' CB;6<@' A?A1 = ' 1 ' 5D ' < . 1 < ' ;A ;=' ' <I<; ' D< FC' 9' C<' GG =1 1 (' A @(' A . ?= ' C<;=(' D ' ' (166AB6 (' EC ' GB ' C1 . =<69' 9 ;EA;@' A=' C<' AI< ?<;' 9' B ;A?<@' GBD61F' . ;A61 (' A @' EC ' =BD . 1 <@' C<' 9 66 E1 ?' A . < @ . < ' ' .< @ . F 1 9 C<' @;A9 ' 9' C<' A@@;<==N , [' <' A== F1A <' B;=<6I<=' 1;<(' nW' @ ' ' 9' 1 ł QE1 C' C<' E1=C<=' 9' B;' AK<= ' D ' @< . A @1 ?' 9' .)' 5@11;<=H' 5 0 I<; . < ' CA ' 1 ' =C B6@' D<9 ;<' A66' C1 ?=' <P<; ' 1 =<69' ' C<' B . =' ' @<I<6 G' C<' . ;A61 ' 9' C<' G< G6<(' A @' ' 6 ?<;' ' < 9<<D6<' 1 ' D ' 9A A6' <PA . G6<= `' ' (166AB6 ' C< ' AGG<A6<@' ' C<' F =F1< F<' 9' C<' (' CA . D<;(' D ' =C E1 ?' CA ' C<' <6<F ;=' = 6@' C<1;' I <=' 9 ;' 6 (F<=' N CA ' C<' I' @<GB 1<=' 6 ><@' ' C<' 1 1= <;=' ' ;<1 . DB;=<' C< . ' 9 ;' C<' <PG< =<=' 9

B ; @ LB#$?K

[1= D =BFC AF = A= C<=< CA ?;<A FA A= ; GC<= A;< D; B?C AD B <A;FC C; B?C_C1= ; 9 ; C< FAB=<= EC1FC CA I< @<G;1I<@ C< ? I<; 1 ? F6A==<= 9G E<;(A @ B E166 91 @ CA C< 6A <;' CA I< 6 6 = 1 EC< C< CA I< ;< @<;<@ C< . =<6 I<=(D C<1;' <? 1= . (B E ; C 9 ;< A1 1 ? = = = C< <I 16= EC1FC G 1 B CA I< A6;<A@ G; @BF<@ C<" . = =<;1 B= ;<I 6B 1 =N A @" @ B E G<;F<1I< CA C< = 16 9 B; G< 1= ;< . D61 ?' D< <A C B;' 9<< c % B 9<<6 C< D;<A C 9 ;<I 6B 1 1 C< A1;' c 91; . F I1F 1 1= CA GBD61F . ;A6= CA I< F . < CA G 1 9 @<?;A@A 1 A EC1FC 9;<=C @1= B;DA F<= A;< 1 <I1 AD6< % B > E ECA E166 G; DAD6 F . < GA== E1 C1 C< <P " <A;=(E1 C1 C< <P <A;(A @ <I< (G<;CAG=(. ;; E'c Q CA' 11 > E 6 1= CA A' < . G<= 1= D; @1 ? I<;' C< C ;1M (CA 1 1= A@IA F1 ? EA;@= A @ E1 = D< BG B = = = < A1 B;' 6AE= 19 B FC =<(DB (9 ;' 0 @3= =A><(FCA ?< C< =G1;1 9 B;' ? I<; . < , CA =G1;1 EC1FC 1= G6B ?1 ? B 1 C< AD == `

= 166 . ;< I1 6< @<DA < > G6AF< ;<=G<F 1 ? C< A =E<;' CA 6 C< G6B3A=< 9 C< G<<FC 9; .' 61< C; <(D EC1FC . A S) G??K? # @ A CB @;<@ @<GB 1<=(EC CA@ A>< GA; 1 C< DA JB< = D EC1FC ;A F< CA@ D<< A?1 A <@(F =1@<;<@ C< . =<6I<= D< GA; 1FB6A;6 A AF><@N A @ C< 6<?A61 9 C =< DA JB< = EA= A C< =A . < 1 . < @1=FB==<@ E1 C <P ;< . < I1 6< F< C< - <<G<;' 9 C< <A6=(WD<; (1 A <6 JB< A @ =< =1D6< =G<<FC(< B . <;A <@ C< ?; B @= EC1FC C< 0 I<; . < E B6@ CA I< C< ;1?C G;<I< GBFC A==< . D61<= EC< C< < @<@ @1= B;D C< GBD61F G<AF<(A @ @<F6A;<@ CA 1 E B6@ ?1I< EA (D<9 ;< A =<@1 1 B= . A 19<= A 1 C1=

@3#>+?@ B3) DG@7 $@7 C@ >$$7>$; @

@<91A F< %B I<;?1<;' @< AB;A < ;<G61<@ D A C<;' < E B6@ 1<6@(C< =A1@(61< B>A=< 9 A 1 1= <;(A @ C< EA= ;<A@ K 1 A66 EC (D = . < @<F1@<@ AF 9 ;<=1=0 A F<(E B6@ G; I< CA C< ;1?C = 9 ;< FC . < . 1?C D< @<= ; <@ D A . <;< @<F;<< 9 C< G 61F< C1= G; 9 EA= F =1= 1 C< A==< . D6 9 C< G;1 F1GA6 @<GB 1<= 9 C< GG =1 1 A A ;<9 ; . DA JB< EC1FC CA@ D<< A6;<A@ A;;A ?<@ A>< G6AF< 1 C< C ;; @1==< . < 9 +A;1=(A @ EC1FC CA@ D<< 1 <;@1F <@ D C< AB C ;1 1<= C1= 9 ; . 1@AD6< @<91A F<(EC1FC CA@ C< <91<F 9 ;A =9<;;1 ? C< @<DA < 9; . C< 96 ;= 9 C< CA . D<;= C< GBD61F C ; B?C9A;<=(EA= 9 66 E<@ D C< I < #

'F 6B . ' 9' C<' G GB6AF<' @<=F< @<@' D ' C<' (B6<IA;@=' C<' ABD B;?= A1 ' A; 1 'A @' C<' < . G6<' A @' G;<F<@<@' D ' C<' ;<@' 96A?' < F B <;<@ A' DA A61 ' 9'1 9A ; ' 9' C<' 61 <' = A 1 <@' 1 '9; ' 9' C<' ;<1? ' 991F<' 1 ' C<' (B6<IA;@' @<=' AGBF1 <=' A @' C<+<' A' @< <= AD6<' G1= 6 =C '91;<@' A?A1 =' C<' ; G=' G; I ><@' C< .'N E1 C B 'AEA1 1 ?' C<' ;@<;=' 9' C<1; 991F<;=' C< ' 91;<@' BG ' C<' . D' EC1FC' F; E@<@' C<' (B6<IA;@' A @' C< A@KAF< ' = ;<< =' A @'1 ' A ' 1 = A ' C<' ?; B @' EA=' ;=E E1 C' I1F 1 . =' 9' <I<; 'A2<' A @' <1 C<;' =<P' ' C1=' =1?C ' @<=' ASBF1 <=' C<' 9B; ' 9' C<' G< G6<' #A=' F<' . ;<' A; B=<@' '1 =' B . =' G1 FC'N C<' @<A@' E<;<' 619 <@' BG' D<9 ;<' C<'= 6@1<;=' EC ' E<;<' C< . =<6I<=' =<1M<@' E1 C' 'C ; ; ;N' G6AF<@' D6<<@1 ?' A @' CA69' A><@@' ' @<A@' FA; =' ;C1FC' =<< .' ' CAI<' D<< ' G;<=< ' 1 ' A 1F1GA 1 ' A @' G; . < A@<@' K1; B?C' C<' (B6<IA;@=' A @' C<' . =' ;< . <' JBA; <;=' 9' C<' F1 ' D ' ;FC61?C ' C<' F; ' 9' [' < ?<A F<'z < ?<A F<' A @' C<' = B @' 9' C<' F=1 ' EC1FC' =G;<A@' 1 =' 9B <;A6' ;<I<;D<;A 1 =' C; B?C' C<' C ;; ;=' 9' C1=' 9;1?C 9B6' 1?C ' C<' 9A A6' <E=' 96<E' 9; .' . B C' ' . B C'N C<' ABD B;?=' A; =<N' +A;1=' D<FA . <' F I<;<@' E1 C' A ' 1 <; . 1 1PD6<' < E ;>' 9' DA;;1FA@<='N A @' D ' C<' . ; 1 ?' C<' >L$C' L7B 7@AA GB;;<<' JBA; <;' 9' C<' B16<;1<=' EA=' A6 . =' < 1;<6 ' F I<;<@' E1 C' C< . ' (<9 ;<' =BFC' G<;16=' A=' C<=<' ' 6<' EA=' G E<;6<==' A @' E1 C@;<E'N EC16=' C<' B; ' G<;F<1I<@' CA 'A' I1? ; B=' A @' @<=G<;A <' ;<=1= A F<' CA@' D<F . <' AD= 6B <6 ' <F<==A;

C<' I1F ;' 9' C<' =6 ' A;=CA6' (B?<AB@' EA=' AGG 1 <@' D<9 ;<' @A 0 D;<A>' ' C<' F 1 . A @ 1 FC1<9' 9' C<' ; G=' ' <' CA@' B @<;' C1=' ;@<;=' (W@<AB' A . ;1F1];<' A @' C<;' ;1<@' ?< <;A6=' A @' <I<; 'G;<GA;A 1 ' EA=' . A@<' 9 ;' A' D6 @ ' A @' @<F1=1I<' = ;B??6<' ' C<' . <A 1 . <' C<' - 1 ?' < ;B= <@' C<' F @BF ' 9' A99A1;=' ' C<' 6<A@<;=' 9' C<' +A;61A . < A; ' GG =1 1 ' C1<;=' A @' @166 ' (A;; ' 0 E161f G E<; 7 EC ' ;B= 1 ?' ' 1 . ^G61F1 6 ' ' C<1P' G GB6A;1 ' D<61<I<@' CA ' C<' F B6@' AGG<A=<' C<' <I 6B 1 ' D ' C<1;' . <;<' E ;@=' A @' G;<=< F<' C<' GB ' A' = G' ' C<' 91;1 ?' 9' C<' ; G=' A @' ;<FA66<@' (B?<AB@' EC ' E1 C' ?;1<9' A @' ;A?<' =AE' C1=' =E ;@' D; ><' 1 ' C1=' CA @=' %1= ;AF <@' D ' F ;A; ' ;@<;=' D<' = 6@1<;=' ;< . A1 <@' = . <' 1 . <' 1 ' A' = A <' 9' 1 @<F1=1 ' A @' 1 AF 1 ' C< ' ADA @ <@' C<' DA;;1FA@<=' ' C<' 1 =B;0 ?< =' A @' ' A' ?;<A ' <P < ' 9;A <; 1M<@' E1 C' C< . ' 9 <;' C1=' C<' 6A <;' D<FA . <' 1 B . <;AD6<' A @' A@IA F<@' 1 ' A' @< =<' . A==' EA;@=' CW" B16<;1<=

B1=' +C161GG<&' A ' C<' 1 = 1?A 1 ' 9' C<' LB<< &' . B < ' C1=' C ;=<' C<' -1 ?3=' 6A=' ;<I1<E<@' A ' C<' A;; B=<6' =<I<;A6' ;<?1 . < =' A @' A' 9< ;' 7@G$@S ' E<A>' DA A61 =' 9' C<' A 1 A6' OBA;@=' C<' ;W?B6T ; G=' ;<F<1I<@' C1 . ' E1 C' F;1<=' 9' [' 9 ' ' '24' (B ' C<' A 1 A6' OBA;@=' ;<G61<@' E1 C' C<' F; ' 9' [' <9 ; . ' ' <9 ; . ' z`' C<' GA==E ;@' 9' CW' <I 6B 1 1= =&' A @' C<' @1=F B;A?<@' A;FC' ;< < <;<@' C1=' GA6AF< C<' F 961F ' CA@' A6;<A@ ' F<A=<@' <I<; EC<;<' <PF<G ' A ' C<' +A6A1=' A6&' A ' C<' CT <AB' @3 AB&' EC<;<' A' CA @9B6' 9' D;AI<' 1 . < &&' E<66' F . . A @<@&' 61= < <@' 6 ' ' C<' I 1F<' 9' C B;' i @' @B ' R C<' G = ' EA=' B6 1 . A <6 ' =< ' ' 91;<# A @' . = ' 9' 1 =' D;AI<' @<9< @<;=' E<;<' =6A1

' AD;1@?<' C<' ;<F1 A6' 9' C =<' 6A . < AD6<' =F< <=' 1 ' EC1FC' A;<' =<< ' A' . A;FC' = ' C ;;191<@ ' A ' D6 @=C<@' A=' ' ;<9B=<' ' A66 E' 1 ' 9 ;' C1=' E . ' =A9< ' A @' CA ' 9' C<' . A;FC ' N ?< <;A6=' G; C1D1 <@' ' AF ' N C1 C<; ' G GB6A;' = A <= . < &' =BFC' A=' ' C1<;=' A @' (A;; &' A < . G 1 ?' 1 ' IA1 ' ' =AI<' C<' C; <&' A @' <I<; EC<;<' 1? ;<@' A @' 1 =B6 <@' N ;<?B6A;' ; G=' ?1I1 ?' EA ' E1 C B ' 91?C 1 ?' N A @' C<' F1 1M< ' . 161 1A&' ' Z . A@ <=='Z = ' D61 @<@' A=' ' ' G<;F<1I<' CA ' C<' FAB=<' EC1FC' EA=' 9A661 ?' EA=' C<1;' E &' A @' = ' K9C;' 9 ;?< 9B6' 9' C<1;' @B ' A=' ' 6 ' ' 9A16' ';<=G @' ' C<' =B . . =' 9' C<' 'O I<; . < &' DB ' <I< ' ' G<; . 1 ' = . <' 9' C<1;' E ' . < . D<;=&' 1 ' C<1;' I ' B 19 ; . &' ' AGG<A;' A . G?=' C<' 1 =B;?< = Y' C<;<' EA=' . A@ <==' <I<; EC<;<&' A @' A ' B 9 ; B A <' FCA F<' ><G ' A ' A' @1= A F<' 9; . ' ;A F<' E ' IA61A ' A @' G G1@A;' G;1 F<=&' C<' %B><=' @3 B . A6<' A @' @<' S 1 I166<&' EC ' A6 <' E<;<' FAGAD6<&' A ' C1=' G<;1 @&' 9' FC<F>1 ?' A @' IA JB1=C1 ?' =<@1 1 ' C<' 1 =B;;<F 1 ' 1 F<==A 6 ' 1 F;<A=<@&' 9166<@'_A66' C<' AGG; AFC<=' ' C<' +A6AF<&' > F><@' A ' 1 =' @ ;=&' A @' EA=' A ' C<' G 1 ' 9' DB;= 1 ?' C; B?C' C<. KQ CA ' A' =G<F AF6<' C<' ' EA=' G;<=< <@' D ' C<' A F1< ' C . <' 9' C<' ;< FC' = I<;<1? =' ' B1=' +C161GG<' = 166' @<0 61D<;A <@' (<=1@<' C1 . ' EA=' C<' LB<< &' 9166<@' E1 C' 1 <PG;<==1D6<' ?;1<9&' DB ' ;<=1? <@' ; B @' C1 . ' E<;<' C<' G;1 F<==<=' 1 ' <A;=&' = BG<91<@' F 1B; 1<;=&' . B <' ?< <;A6=&' G E<;6<==' A @' <;;191<@' . 1 1= <;=' C<' E ;@' AD@1FA 1

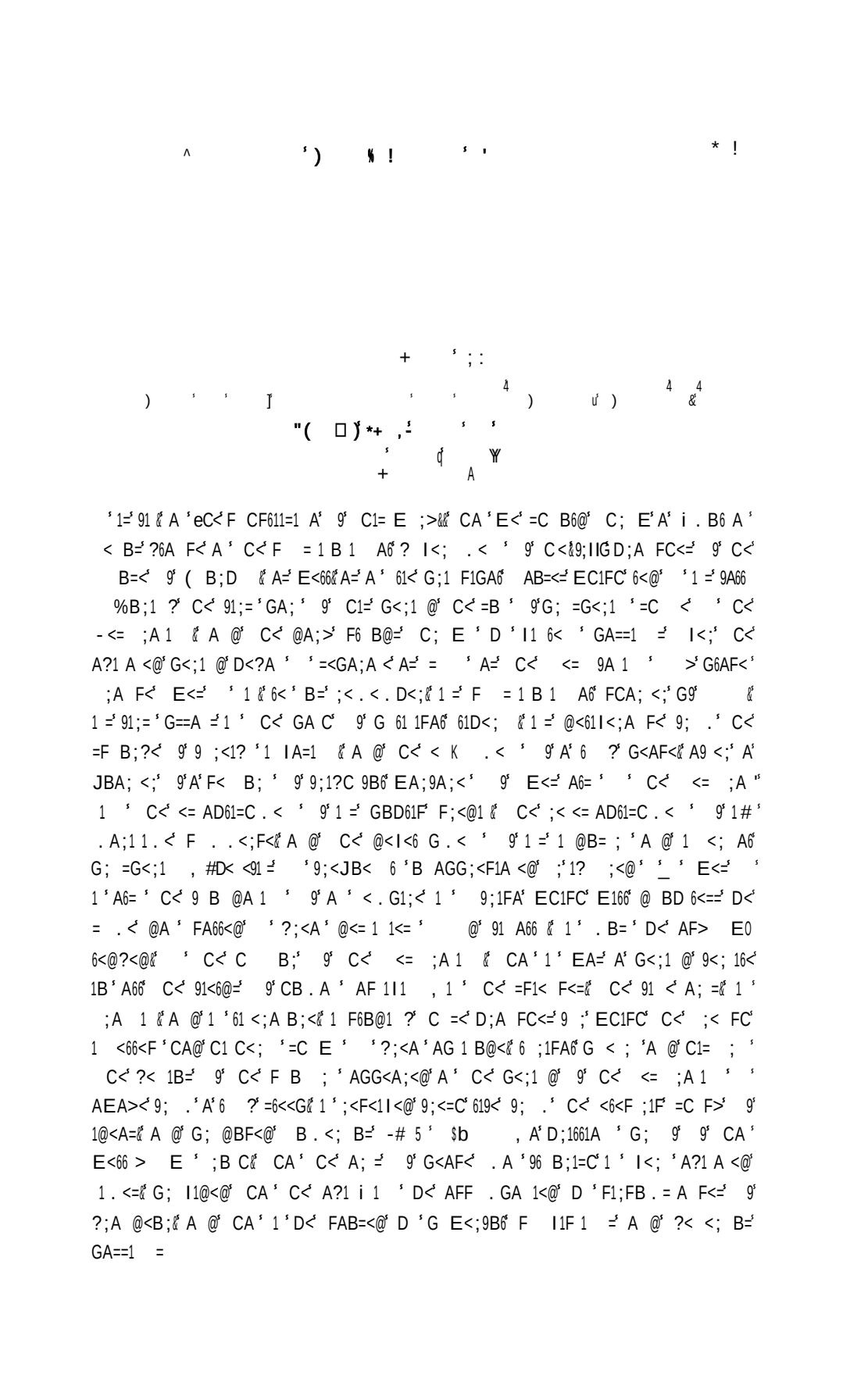
I' ?>7?@#K' >' <@+<M' L>7<' B3' <M@' ?$<$V@+' ; $#$<$>' >A AD ; @C' <M@$7' ' $+' <M@' C>KA' B3' @J7D>7K ' >+C' B3' <M$A' +D ; J@7' >' G@7K' A ; >## LB7<$B+' ; >C@' ?B ; ; B+' ?>DA@' S$<M' <M@' $+AD71 7@?<$B+$A<A ' <' $A' ++<7D@ ' <M@7@3B7@ ' <M><' <M@' ><$B+>## ! D>7C' BG@7<M7@S' <M@' ! BG@7+ ; @+<' B3' ' D#K ' <M@' C@3@+?@' B3' SM$?M' S>A' ?B+3$C@C' <B' $<'] JD<' $<' $A' <BB' <7D@' <M><' $<' >##BS@C' $<' <B' L@7$AM ' >+C' <M$A' S>A' >+' $; ; @+A@' 3>D#<' SM$?M' M>A' +B<' J@@+' K@<' 3B7 B<<@+

' LL>7@<' CB ; DA' $+<DA' @<' ><7$>' #B+ >' L><@A?D+<']

LL>7@+<' 7$> ; $' @<' G@<@7D ; ' L@+@<7>#$>' 7@ D ;

* ' % ' ' : !>$' 8* -'$ Y

' C<9 66 E1 ?' @A 'a C< 7 C' <D;BA; b' C<+; I1=1 A6' 0 I<; .<
G; F6A1 .<@' C< <GBD61F'N A @' ;A F< EA=' CB=' G F< . ;<N
7B?#>;><$B+'B3' $@' @LDJ#$B' ?1I<'BG' ' <I<; ' =G<F1<=&' ' @A ?<;' B 16&' 1 ' AFF ;@A F<
Q E1 C' C< 1 96<P1D6< 6AE' 9' C1= ; & A A;FC ' G; @BF<@' A
. A= <;&' A @' B1=' AG 6< ' (AGA; < D A1 <@&' D 'B 1I<;=A6' =B99;A?<&
C<' G;]=1@< F ' 9' C< <GBD61F&' A @&' A ' A' =BD=<JB< 'G<;1 @' a%<F< . D<;&
78b' C< . G<;1A6' C; <



) " ' ' ' ' : ! ' $ ' 8* -' "

C< 9 66 E1 ?' G<;1 @ , CA ' 9' C< 0 I<; . < ' 9'SB6 , EA=' @ BD 6<==' A=' 9;B1 9B6' 1 ' GA;61A . < A; ' <6 JB< F< A=' CA ' 9' C< <= ;A 1 'Ñ DB ' . = ' 9' C< . < ' EC ' CA@' C< ' AFJB1;<@' A' A . < 1 ' 61 <;A B;< CA@' D<F . < G 61 1F1A =' ;' 991F1A6=' ' C1=' AFF B ' A @' ' C<;=' EC1FC' ' E166' ' . < 1 ' C<;<' ;< FC' 61 <;A B;< EA=' 6<==' 9<; 16< 1 ' C1=' =<F @' G<;1 @' CA ' 1 ' C< 91;= ' Y G; @BF1 ?' 9<E' ;< . A;>AD6< E ;>=' <PF<G ' A' F<6<D;A <@' < D ' 6<P1=' @< FJB<I166<' B ' 9' C< ;<?1 =' 9' F;1 1F1= . ' A @' ; . A F<Ñ C1=' 6A <;' =G<F1<=' 9' E;1 1 ?' <=G<F1A66 ' D<1 ?' FB6 1IA <@' E1 C' . BFC' =BFF<==' D ' . < ' 9' IA;1 B=' A6< =' DB ' ' 9 < ' 1 ' . B= ' D< A@@<@' ' C< G;<KB@1F< 9' ? @' . ;A6=' C1=' G<;1 @' A6= ' =AE' 1 @B= ; ' 96 B;1=C' 1 ' IA;1 B=' D;A FC<=' C< GBD61F' F;<@1 ' <= AD61=C<@' C< GBD61F' E<A6 C' @<I<6 G<@' ' C< C1?C<= ' G 1 ' A @' C< <199 ; =' 9' C< 0 I<; . < '1 . 1 <@' E1 C' C =< 9' G;1IA < 1 @1I1@BA6=' ' < @ E' C< F 1 . ; ' E1 C' 1 =' G;1 F1GA6' ;A16EA = ' ' ?;<A ' <P < =1 ' EA=' A6= ' ?1I< ' @B;1 ?' C1=' ;<1? ' ' ;< FC' F JB<= =' 1 ' 9;1FA' EC1FC' C E<I<;' 1 ' . B= ' D< A@ . 1 <@' E<;< A6EA =' 6<==' G; @BF0 1I< CA ' F = 6 'Ñ A @' A6 C B?C' B1=' +C161GG<' ' C1=' C B;' D< 1 ' =A1@' CA@' G;<=<;I<@' C< ?< <;A6' G<AF< 9' B; G<' <I<; EC<;< EC<;< ;A F< =C I<@ C<;' 96A?' B @<;' C1=' G;1 F< A=' B @<;' C< (B;D =' 9' C< <6@<;' D;A FC' 1 ' AFJB1;<@' C B;

C<=< I ' . A;FC1<=' CAI< 9A66< ' A @' CAI< < A9 <;' C< C<;' D<< ' < ?B6GC<@' D<9 ;< B;' < <=' C< . 1 @' ?; E=' ?1@@ ' 1 ' C< F < . G6A 1 ' 9' C<1;' 9A66' A @' 1=' = ; ?6 ' 1 F61 <@' ' A ;1DB < 1 ' ' 166 9 ; B < A @' 9A A61 ' (B ' C< E ;6@' 1=' ' ? I<; <@' D ' 9 ; B <' [' C<;< A;< ?< <;A6' FAB=<=' =A =' <=JB1<B' [D C' . ;A6' A @' GC =1FA6' IC1FC' AF ' BG ' <I<; ' . A;FC ' A @' <1 C<;' <6<IA < A @' G;<=<;I< 1 ' ;' CB ;6' 1 ' ' @<= ;BF0 1 ` C1=' ?;<A ' ;B C' D<F . <=' . A 19<=' ' C =< EC ' <PA . 1 < A < 0 1I<6 ' C< FA A= ; GC<=' EC1FC' CAI< I<; A>< ' B;' . A;FC1FA6' A @' GA;61A . < A; ' ? I<; . < =' C<;< I<;< 1 ' <AFC' 9; .' C< . . < '' 9' C<1;' ;1?1 ' A=' E< CAI< A6;<A@ ' =A1@' 9A A6' FAB=<=' 9' ;B1 '1 C<;< ' ' C< G =1 1 ' 1 ' EC1FC' C< ' E<;< G6AF<@Q A @' 1 =<GA;AD6< ' C< A B;< 9' C1 ?=' ' EA=' A' ?;<A ' . 1=9 ; B < 9 ;' C< 91;=' 9' C<=< 0 I<; . < =' CA ' 1 ' AGG<A;<@' ' 1==B< 9; .' 9 ;<1? ' 1 IA=1 ' A @' C< CB . 161A 1 ' 9' ;A F<' A @' 1 ' EA=' A' @A ?<;' 9 ;' C< C<;' CA ' 1 ' CA@' D<< ' D ; ' 9' A' =BFF<==9B6' <I 6B 1 ' C< 1D<;A6=' (AGA; 1= =' <GBD61FA =' F' F6 =1 ?' C<1;' < <=' ' C< 1 . . < =< =<; I1F<=' ;< @<;<@' ' C< F B ; ' @<F;1<@' C< 91;=' A=

I' ; B+ A< <M@' ?>DA@A' SM$?M' ?B+<7$JD<@C' <B' <M$A' 7@AD#<' LB#$<$?>#' C@J>A@ ; @+< MB#CA' <M@' 3$7A< L#>?@

y ^ # ') ')

C< A B;A6 A66 ' 9 9 ;<1? <;= A @ C< < < . 1<= 9 ;A F<ℕ EC16= ' C< FAB=< 9 C< =<F @ EA= 1@< 191<@ D ' C< . ' E1 C C =< 9 A66 ;<I 6B 1 =& A @ ' . A ' 9 C< . ' D<61<I<@ CA ' C< ' E<;< 1 ' G<; . A < ' G ==<==1 ' 9 C< ;1?C ' ' ;<= ; & 9 ;' C< GB;G =< 9 I<; C; @ ?1 & ' C< . <A = D ' EC1FC 1 ' CA@ D<< ' <= AD61=C<@

C<;< EA= A @A ?<;' ' C< <= ;A 1 ' 1 ' C< I<; 'G;1 F1G6< 9; . ' EC1FC 1 ' @<;1I<@ 1 = 9 ;F<& C< C<;<@1 A; ' A @ ;A@1 1 A6 G;1 F1G6<& EC1FC 1= @ BD 6<== I<; ' E<66 FA6FB6A <@ ' F = 61@A < 'A 0 I<; . < ' A @ ' ?A1 ' 9 ;' 1 ' C< ;<=G<F ' 9 G< G6<=& DB ' EC1FC& EC< ' 166 B @<;= @ A @ ;<?A;@<@ A= A =G<F1<= 9 @1I1 < G;1 F1G6<& =BG<;1 ;' ' A66 C<;=& 1= A6 . = ' F<; A1 ' ' G6B ?< A . A;FC ' 1 ' C< AD == ' C< F 1 A; ' G;1 F1G6< , CA ' 9 A _ A 1 A6 = I<;<1? , #61A= A6= ' 1 = 91F 1 = A @ 1 = @A ?<;=ℕ DB & 1 ' C< FA=< 9 C< 9A16B;< 9 ;A@1 1 A6 ;1?C & 1 ' 1= <I<; C<6<== C< 6 ' DA=1= ' EC1FC <E ? I<; . < = FA ' D ' <= AD61=C<@ ' C< 0 I<; . < ' 9 SB6 ' 1 I ><@ 1 ' 1 = 9A I B;' C< A 1 A6 E166& DB ' 1 ' <?6<F <@ ' F =B6 ' 1 ' D ' . <A = 9 A ' B 1I<;=A6 I <K A @ ' <= AD61=C 1 ' D ' C< 6 ' 9 ; . = EC1FC E<;< 9 ; . <;6 ' A @ A;< E 1 ' B=<' ' CB= ;< . A1 <@& 1 ' C< < <= 9 C< . A==<=& 1 ' A ' <JB1I FA6 A @ 9A6=< G =1 1 & @<G;1I<@& ' C< < CA @& 9 C< = ;< ? C EC1FC 1= ;A = . 1 <@ E1 C C< 6<?A6 A @ ;A@1 1 A6 G;1 F1G6<& A @ ' C< C<;' 9 C< G E<;' A99 ;@<@ D ' A @<F1@<@ @< . = ;A 1 ' 9 C< G GB6A;' E 166ℕ A @ C1= EA= < 9 C< ; F>= ' EC1FC 1 ' = ;BF>' (B ' C< . = ' @A ?<; B= ; F> 9 ;' <AFC 9 C< E ' 0 I<; . < = <P1= <@ 1 ' C< I<; ' = A < 9 = F1< & 1 ' C< F . G =1 1 ' 9 C< F6A==<= EC =< @B ' 1 ' . ;< GA; 1FB6A;6 ' EA= ' =BGG ; ' A @ @<9< @ C< . ' C< <= ;A 1 ' D; B?C ' 1 ' C< G 61 1FA6 A;< A . < ' EC . ' C< <I< = 9 A JBA; <;' 9 A F< B; ' CA@ ;< @<;<@ C = 16< ' <AFC C<;& A @ EC . ' C< 1; ' CA @ 9 AG 6< ' CA@ C<6@ 1 ' FC<F> A @ @1=A; . <@& = . < = 166 D6<<@1 ? 9; . ' C<1;' E B @= A @ <A?<;' ' ;<GA1;' A @ AI< ?< C<1;' 6 ==<=& A @ C<;= @< <; . 1 <@ ' @<9< @ C<1;' F JB<= =ℕ EC16= ' A66 E<;< <JBA66 '1 F AD6< A @1 . G6AFAD6<& A @ . BFC . ;< FFBG1<@ 1 ' 9 ;?1 ? 9 ;' C< . =<6I<=& D ' . <A = 9 6<?1=6A 1 & A; . = EC1FC E B6@ < AD6< C< . ' ' AFJB1;< G E<;& CA ' 1 ' =BGG ; 1 ? 61< F = 1 B 1 ' A @ C< F; E ' D ' @<I<6 G1 ? C< ;<= B;F<= 9 61< F B ;

1F ;1 B= A '6< ? C& 1 ' 8"&&D ' C< A1@ 9 C< . D& C< @ ' EC ' @1=G =<@ 9 C< =F<G ;< 1 ' C< A . <& 9 ;1B1F<& A @ ' A ' = . A66 G ; 1 ' 9 EC . ' C< 0 I<; . < ';<61<@ 1 ' C< <6<F 1 =& E<;< F = A 6 ' C<6@ 1 ' FC<F> D< E<< ' C< ;<G;<=< A 1I<= 9 C< 6@ G;1I16<?<@ F6A==<= EC ' CA@ D<< ' IA JB1=61<@ E1 C C< ;A@1 1 A6 . A;FC & A @ A G ; 1 ' 9 C<

*) ' ' ' < 8 ' : !>' ' '%

G GB6A;' F6A==<=' EC ' CA@' D<< ' @<F<1I<@' 1 ' C<1;' C G<=' A @' E<;<' <PF1 <@' D ' C<1;' C;<G' @A =3 I1F ; ' C< ' CB=' 9 B @' C< . =<6I<=' D<=< ' E1 C' <JBA6' 9B; ' D C' 9; .' AD I<' A @' 9; .' D<6 E&' EC16=' C< ' E<;<' @<G;1I<@' E1 C1 ' C<1;' E &D @ ' 9' . =' 9' C<' F =<; IA 1I<' <6< . < =' 9' < . G1;<=&' A @' CA@' ' C<;' = ;< ? C' CA ' CA ' A99 ;@<@' D ' A ' B 1 ' EC1FC' A=' C<' ;<=B6 ' 9' F . . ' 1 <;<= ' A @' F . . ' @A ?<; , #A IA;1AD6<' A @' G;<' FA;1 B=' = ;< ? C&' EC1FC' 1=' < 9<<D6<@' 1 ' G; G ; 1 ' A=' C<' F . . B 1 ' 9' 1 <;<= ' 'A @' C<' 1 . . 1 < F<' 9'@A ?<;' C< . =<6I<=' @<F;<A=<

BFC' <;<' C<' D= AF6<=' A @' C<' G;1 F1GA6' @1991FB6 1<=' EC1FC' E<1'<' 5< F B <;<@' 1 ' ' A @' 8"' D ' C<' 0 I<; . < =' 9' C<' <6@<;' A @' C<' B ?<;' D;A FC' 9' C<' B=<' 9' C<' (B;D = , @1991FB6 1<=' 1 C<;< ' ' C<' = A <' 9' C1 ?=' EC1FC' <P1= <@' D<9 ;<' A ' 9AB6 ' CA@' D<< ' F . . 1 <@&' A @' EC1FC' E<;<' <I< ' 1 @<G< @< ' 9' A ' I1F<' 1 ' C<' F = 1 B 1 ' C< ' E<;<' ?;<A ' E1 C B ' D<1 ?' 1 =B; . B AD6<&' A @' 1 . G =<@' BG ' C<' 1C1= ' ' <;=' 9' C<' E ' 0 I<; . < =' C<' AD= 6B <' <F<==1 ' 9' D<1 ?' G;B@< &' 9' =<<>1 ?' C<' =BGG ;' 9' C<' D @ ' 9' C<' A 1 &' A @' 9' @1=G6A 1 ?' ?;<A ' 5A < 1 ' ' C<' ;<A6' E1=C<=' 9' C<' A 1 N C1=' <F<==1 ' D<1 ?' = ' . BFC' _1 C<' ?;<A <;' D<FAB=<' C<' I<; ' FCA;AF <;1= 1F' G;1 F1G6<' 9' F = 1 B 1 A6' A @' 9;<<' = A <=' 1=' CA ' C<' 0 I<; . < '=C B6@' D<' C<' 9A1 C9 16' <PG;<==1 ' 9' C<' 1 <;<= =&' C<' <F<==1 1<=&' A @' C<' . ;A6=' 9' C<' = F1< ' I<;' EC1FC' 1 ' 5G;<=1@<=

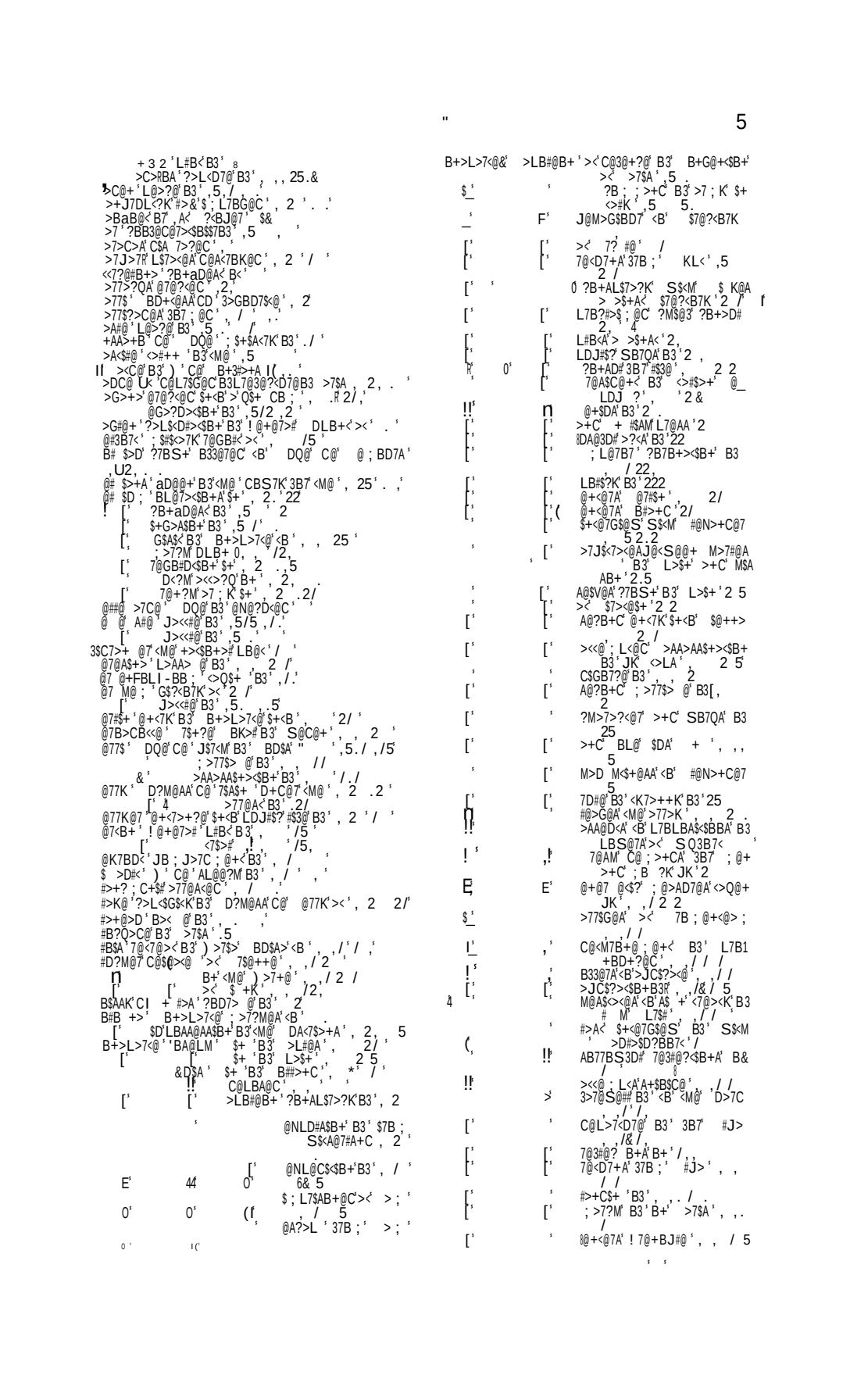
C<' =F;BGB6 B=' D=<; IA F<' 9' C<=<' F @1 1 =' 9' <P1= < F<' E B6@' CA I<' G; DAD6 ' G;<I< <@' C<' <I< =' 9' 8"' A @' N' DB ' C<=<' F @1 1 =' E<;<' ' D=<; I<@ ' . D1 1 B=' ;' ' F 91@< &' 1 1= <;=' @1=@A1 <@' GBD61F' G1 1 &' = . <' 9' C< . ' A < . G 1 ?' ' @1=G6AF<' C<' F< ;<' 9' ?;A I1 ' 9' C<' = F1A6' D @ &' EC16=' C<' C<;=' = B?C ' 9 ;' A' 9 B @A 1 ' 9 ;' C<' 50 I<; . < ' EC<;<' C<;<' A=' <' C< ' E<;<' 5><G ' 1 ' G ==<==1 ' 9' C<1;' 991F<=' D ' . <A =' 9' CA ' B 61 . 1 <@' A@ . 1 1= ;A 1I<' G E<;' 9' EC1FC' C< CA@' <JBA66 ' . A@<' A' 6 ?&A @' F 1 BA66' B=<' ' F;B=C' @ E ' GBD61F' G1 1 ' ' C<' G 1 ' A ' EC1FC' 1 ' D<F . <=' 9B;1 B=' A @' B ? I<; AD6<

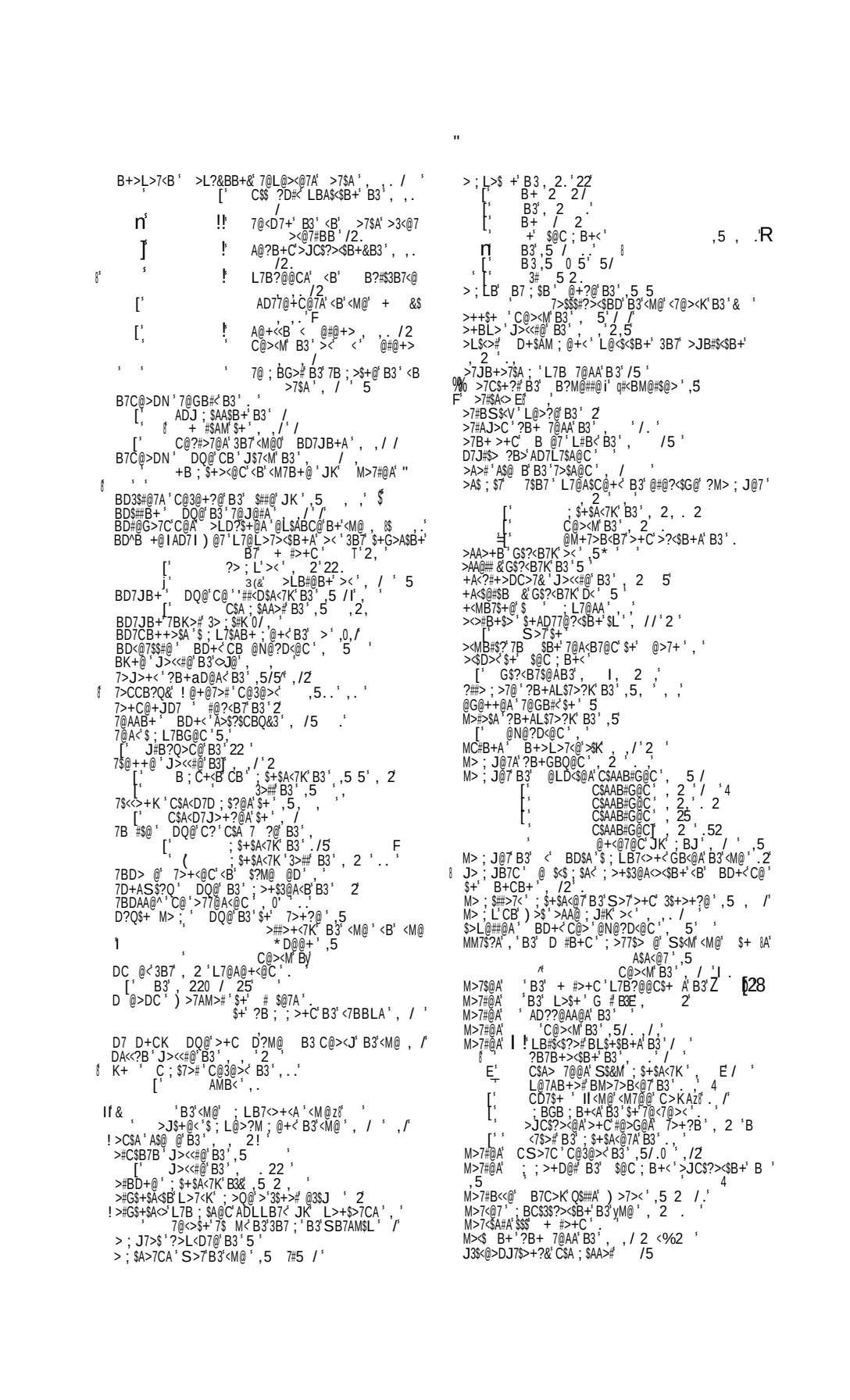
% ' ' 6< ' B=' A < . G ' ' @A;>< ' C<' G1F B;<' D ' =C E1 ?' . < ' ' D<' . ;<' ?B16 ' CA ' C< ' A;<' C<;<' A;<' 9A A6' F1;FB . = A F<=' EC1FC&' F . 0 D1 <@' E1 C' F<; A1 ' G1 1 =&' 9;<JB< 6 ' CB;; ' A6 ?&' 1 ' =G1 <' 9' C< . 0 =<6I<=&' C<' D<= ' A=' E<66' A=' C<' AD6<= ' . < ' C< ' A' G;1 F<&' 1 ' 9AF &' EC ' CA=' D<< ' D; B?C ' BG' 1 ' C<' @ F ;1 <' 9' C<' G 61F ' F =<F;A <@' ' (==B< ' A @' C<' @1I1 <' ;1?C ' 9'>1 ?=&' FFBG1<=' A' F = 1 B 1 A6' C; <&' C<' . . < ' . B= ' F . <' = <;' ;' 6A <;' EC< ' C<' E166' F =1@<;' C1 . =<69' D B @' D C' D

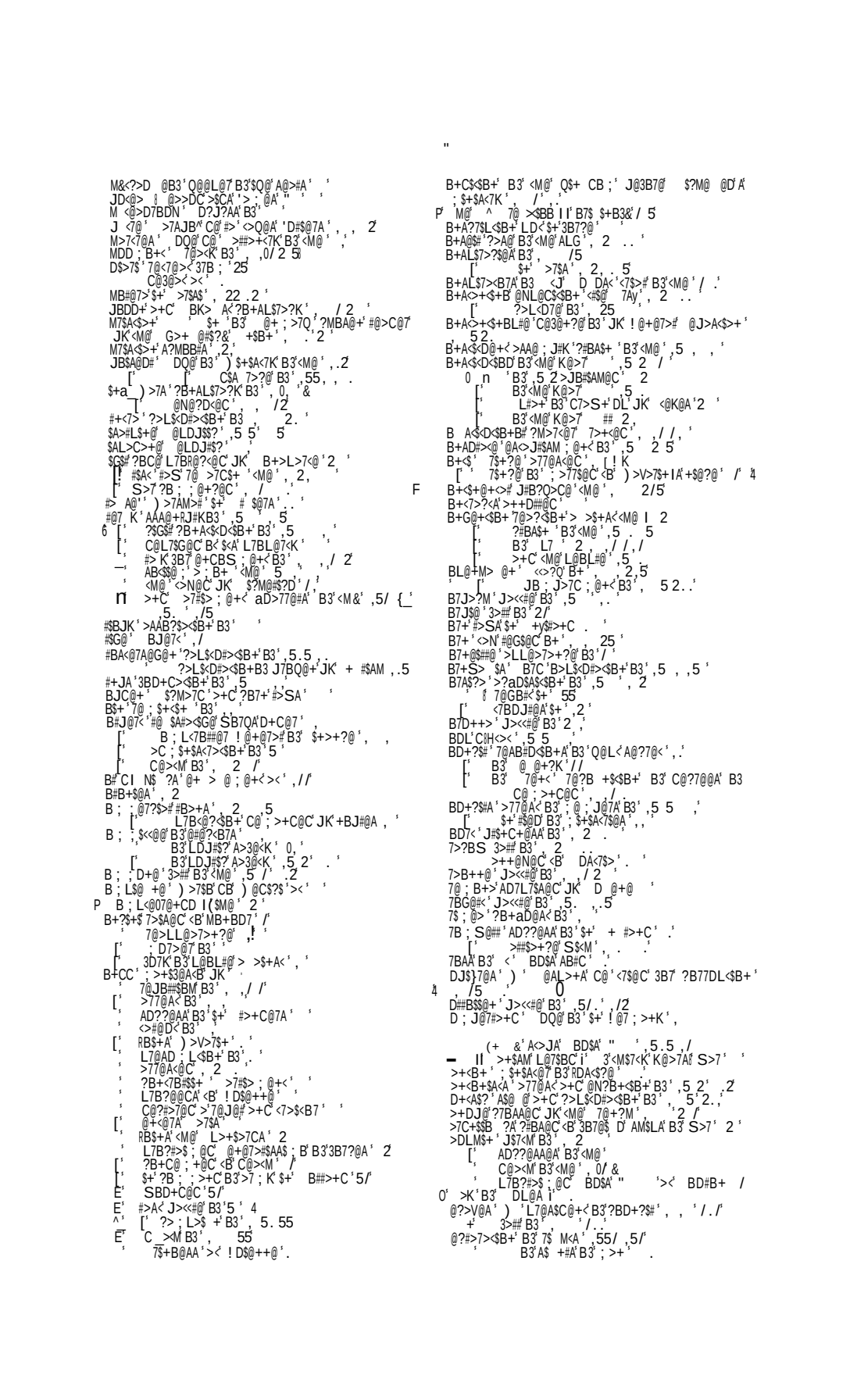
% :

0 , 0 '$+' # $@7A'
[' 7@<$7@A'<B') B7B??B'
[' ADJ ; AAB+'B3' , ,5
JC$?><$B+'B3' B+>L>7<@' , ,/ / 5'
?>C@ ; K' 7@+?M'L7B<@A<' B3' $@' > >$+A<' <M@'
?@+AB7AM$L'B3'L7@AA' , ' / '
?<' B3') @C$><$B+' ' 2 2'
CC7@AA'<B'<M@'Q$+ ''C@J><@'B+'<M@' , 2 '
3<$B>' 7@+?M'?B+aD@A<A'$+' ,5
' #BAA@A'B3'<M@' 7@+?M'$+' ,5 5' ,5 , . '
[' S>7'$+' , /20/ '
BA<>'G$?<B7K'><' 5
7$?$$#<$$7>#'$+<@7@A<A'C$A7@ >7C@C'JK' B#J@7<'5,'
D@AA@>+'7@?>## B3'C(' ,5 ' ' '
$ +>+' < ' DM@'?B+AL$7>?K'B3'$+' L>$+' ,5, '

$ +$<#B+' +M@'C' '<7$>#'B3' , '
$N0#>_ M>L@##@'?B+3@7@+?@'><''// '
[' L@>?@'B3',5/ ,/
[' <7@><K'B3' , 5
#>$A'L@>?@'B3' , ' 2'
<$J@7B+$' >7C$+>#'C$A 7>?@'B3'#5# , 2'
$#@N>+C@7'J@+@GB#@+?@'B3'/ 2
[' ?BB#+@AA'<B' B+>L>7<@'25'
[' $+<@$G$@S'S$<M' B+>L>7<@' , 5'2 2'
[' L7BLBA@A'L@>?@' , 2 '
,@V>+C7$> FB+G@+<$B+'B3'2,/'
@7$>' L7B 7@AA'B3' .5 '
' <M@' S>7'$+' , '
'' 7@G@7A@A'$+' , / '
@7$>+'aD@A<$B+'?7AA'B+'<M@' , 2/' //'
$@7A'JB ; J>7C@C' , 2 5 '
[' B>L<D7@C' , 2 / '
$ @A$7>A'J><<#'B3' , , 2, '
#$J>DC' ><@ ; L<' B3' <B' >AA>AA$+><@' BDA'
M$#$LL@' , 2' , '
#$ 7@'C$A ; $AA>#B3C(' , '
##$@C'>7 ; $@A'>CG>+?@'B3' , ,/'2 ,
[' @+?> ; L'>7BD+C' >7$A' , ,/ / ,
[' $+' >7$A' , ' /22
##$@C'ABG@7@$ +A'$+' >7$A' , ,/ / 2'
##$@A'>CG>+?@'B3' , , ' /2'
; >+A>'G$?<B7K'><' ,5B5 , '
#LA'L>AA> @'B3'<M@'I '2, '
; @7$?>' $+C@ ; +$<K' 3B7' G@AA@#A' ?>L<D7@C' C@1
; >+C@C'JK'./ '
[' #B>+'<B' ,5
#BAA@A'B3'<M@' 7@+?M'$+' ,5.5 ,5 ,
BL@7><$B+A'$+' ,5 ,55
<7@><K'S$<M' ,5
; @7$?>+' ?B#B+$?A'7@GB#<'B3' ,552'#5/'
; $@+A'L@>?@'B3' 2,
[' 7DL<D7@'B3'<M@'L@>?@'B3' , 2 5'
; +@A<K'B7' , 2,
[' L7BLBA@C' , 2/' ./
[' $J7' LB#$<$?>#' B# @+C@7A' 7>+<@C' , 25
/
+?B+>'?>L<D7@'B3' , 2 ' . 5
+C>#DB$>'$+'<M@'LB$@7'B3'<M@' 7@+?M' , , 2
+CD#>7'C@?7@@'B3' , 2 /5/
$KBD' DQ@'B3'7@?B +$A@C'>A' $+ 'B3' L>$+' 2
++@'B3' +A<7$>'
[' C@><M'B3' , 5,
[' $+AD#<@C' JK'#$J@#A' 5
[' L7B?@@CA'<B'7@GB#<@C'L7BG$+?@A
[' 7@ @+<' / /
[' 7@?B +$A@C'>A'K@ @+<' /
' 7@L7B>?M@C' $+' <M@' BBB+B
?M> ; J@7'
++@'* +@@+'B3' + #>+C' '
+<$@7L 'B?@+L$BC'JK'<M@' D<LJ' , 2,' '
A$@ B'B3'7@AB#G@C'B+' , 2 22'
[' A$@ @'B3' , 2 2/' '
L7$# 7$B<@7A'<7$>#B30<M@' /5'
7@MJ$AMBL:A' >#>?@'L$##> @'B3'<M@' , 2, ' ,'
7?$A0AD70 DJ?'J><<#@'B3' , , / 2
7BB#@& G$?<B7K'><' , 5 2'
P' 7@+>'?B+AL$7>?K'B3'<M@ i' , 2, '
7 B' ; B' 7DAA$>+A'B#$@BQ@C'><' 5
7$A<B?7>?K'>J>A@C'JK' $?M@#$@D'/ ,'
P' 7 ; @C'+@D<7>#$<K i' ,5 ,5 '
7 ; $@A'RD+?<$B+'B3'<M@'MBA<$#@' , , / ' 2 2'
7 ; A'B3' 7>+?@'AD??@AA'B3'<M@' '
7 ; K'C$AA><$A3>?<$B+'B3'<M@' , , / / , '
[' @+3@@J#@ ; @+<'B3'<J &'
[' $+<@73@7@+?@'B3'<M@'$+'CB ; @A$?'LB#$$?A '
[' #>S'B+' <M@'B7 >+$V><$B+'B3'<M@' / / '
P' 7 ; K'B3'<M@'3>$<M i' /5 '
7 ; K'>+C'+>GK'#>SA'7@ >7C$+ '<M@' .25'
' 7>A'$+G@A<@C' , / ' 2 '
[' A$@ @'B3'7>$A@C' /
77B+C$AA@ ; @+<A'+@S'#>S'7@#><$+ '<B' , / 5'
7<'SB7QA'B3' 7@<D7+@C'/2 '
7<A'<M@'CD7$+ '<M@' ; $+$A<7K'B3' $?M@#$@+'/5'
7<B$A' BD+<'C('@+<@7A' >7$A' , ,/ / '
[' $+3#D@+?@'B3'//,
[' >< A#@' $?$$',5 ' 5'
A$>'#BAA@A'B3'<M@' 7@+?M'$+' ,5 5%,5 ' , '
AAB>' M@G>#$@7'Cg >##>+<7K'B3' ,
AA>AA$+>$B+A'B3' 7B<@A<>+<@' , , // '
AA@ ; J#K'L>7<$@A'$+'<M@' /'
AA$ +><A'$AAD@'B3'
AAB?$>$B+'#>S'B+' 2 '
<M@$A<$?'A?MBB#'7$A@'B3'<M@' , '
<7B?$<$@A'B3' B ; $<<@@'B3' DJ#$B' >3@<K'$+'<M}'
@L>?$; @+<A',5 /' 2'
<< @7@>D'G>#BD7'B3'><' 7?B#@' 2'
D AJBD7 ' @> D@'B3' 5'
DA<@7#$<V'J><<#@'B3' , '22 '
D ; >#@' DQ@'C(' ><< ; L<' <B' >AA>AA$+><@'<M@'
, / , 2
[' [' <>Q@A'<M@' ; >#>'B3' MC0@#0
>C@7' ,2,2'
+A<7$>'C@?#>7@A'S>7'> >$+A<' 7>+?@' , , 2
' S>7'C@C<>7@C'> >$+A<' ,5
DA<7$>+' >7 ; K'C@3@><@C'JK' B+>L>7<@' 5
[' A+@?@AA$B ' S>7'3B7'<M@' ,5/ %,5/ ,2 'h
DA<7$>+A'7@0@+<@7' <>#K' 5
[' S$<MC7>S37B ; ' <>#K' , 2, ' /'
G@7A<>C<'JD<<#@'B3' , 2/ '
G$ +B+'A@$V@C' 5



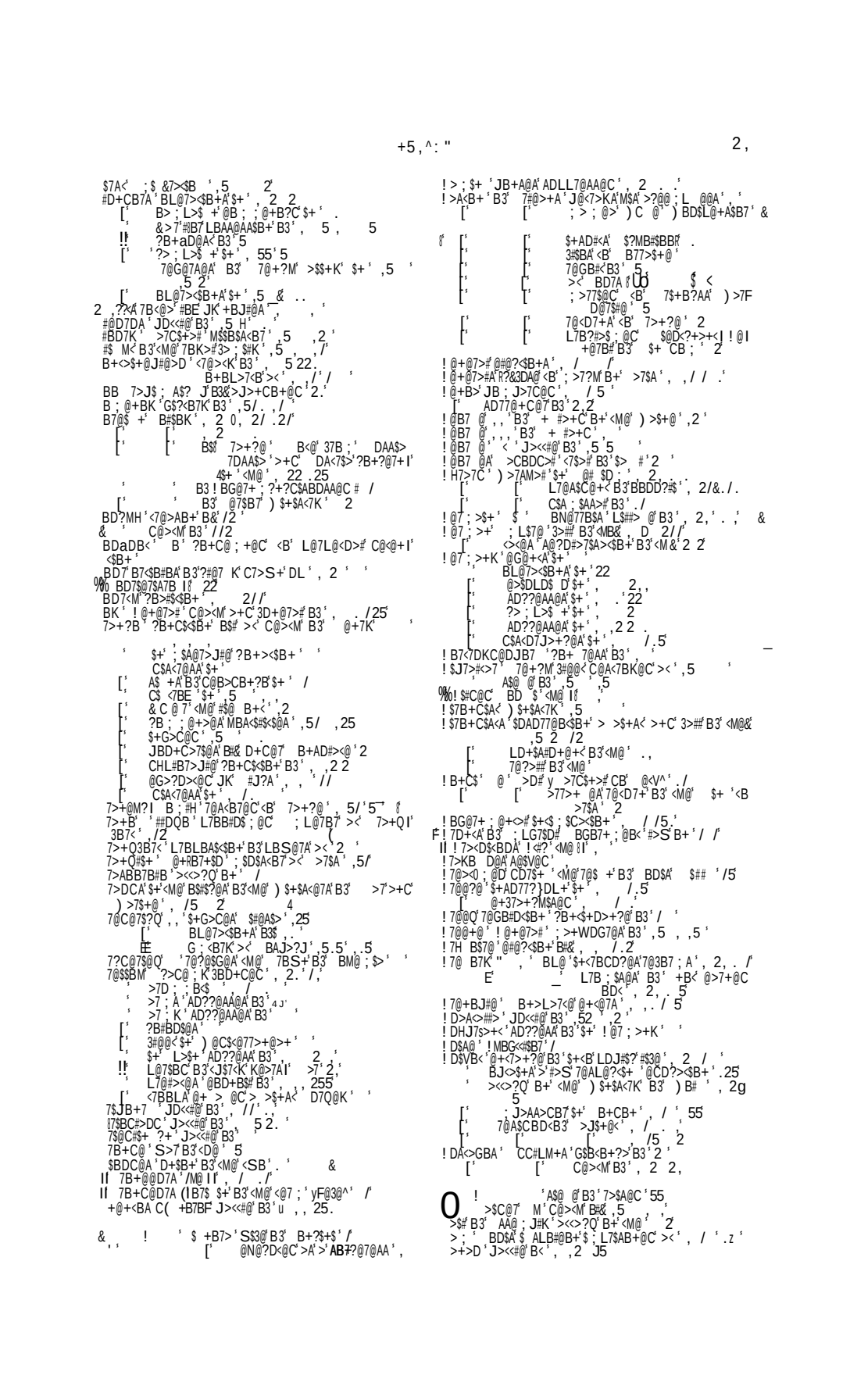


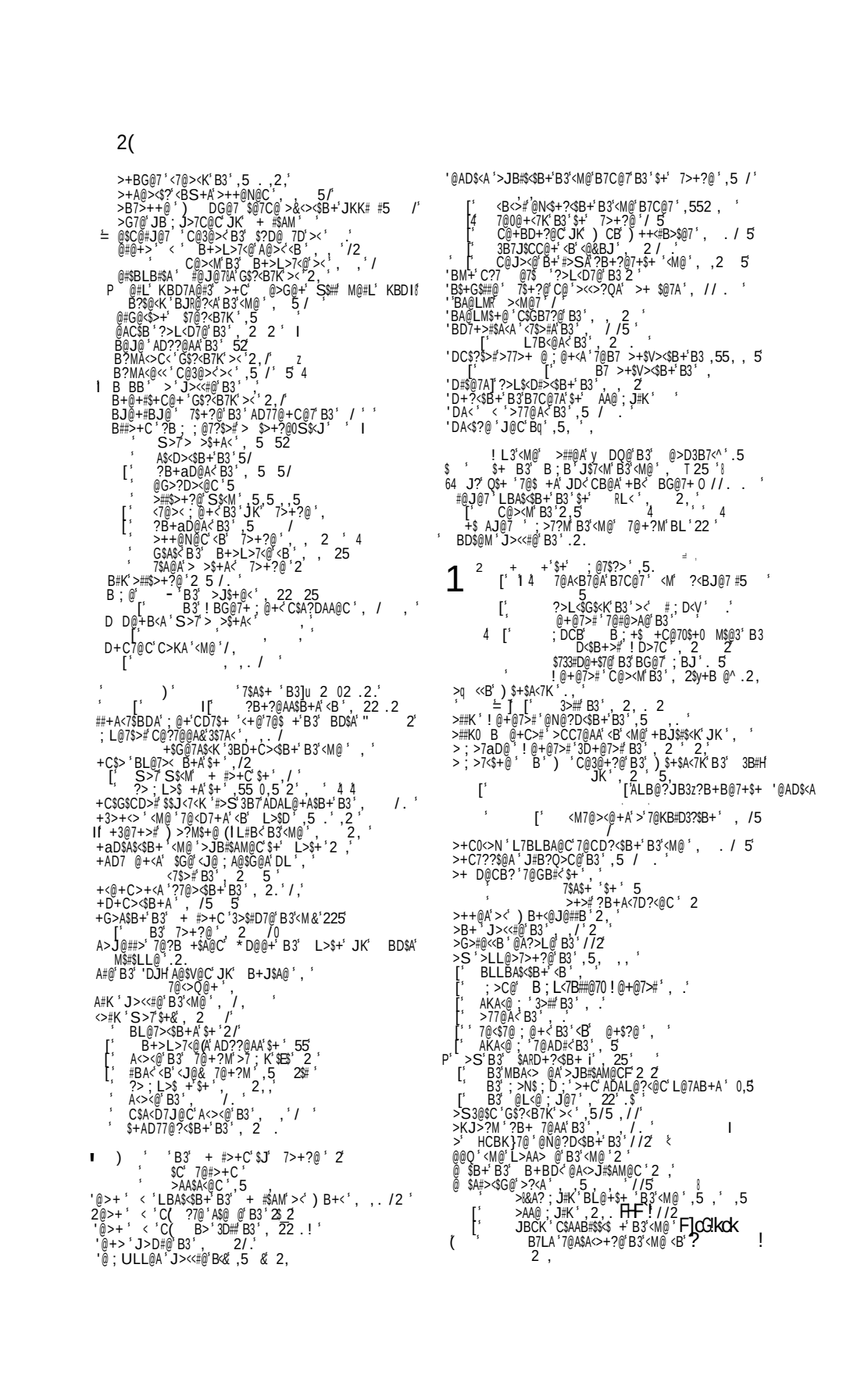


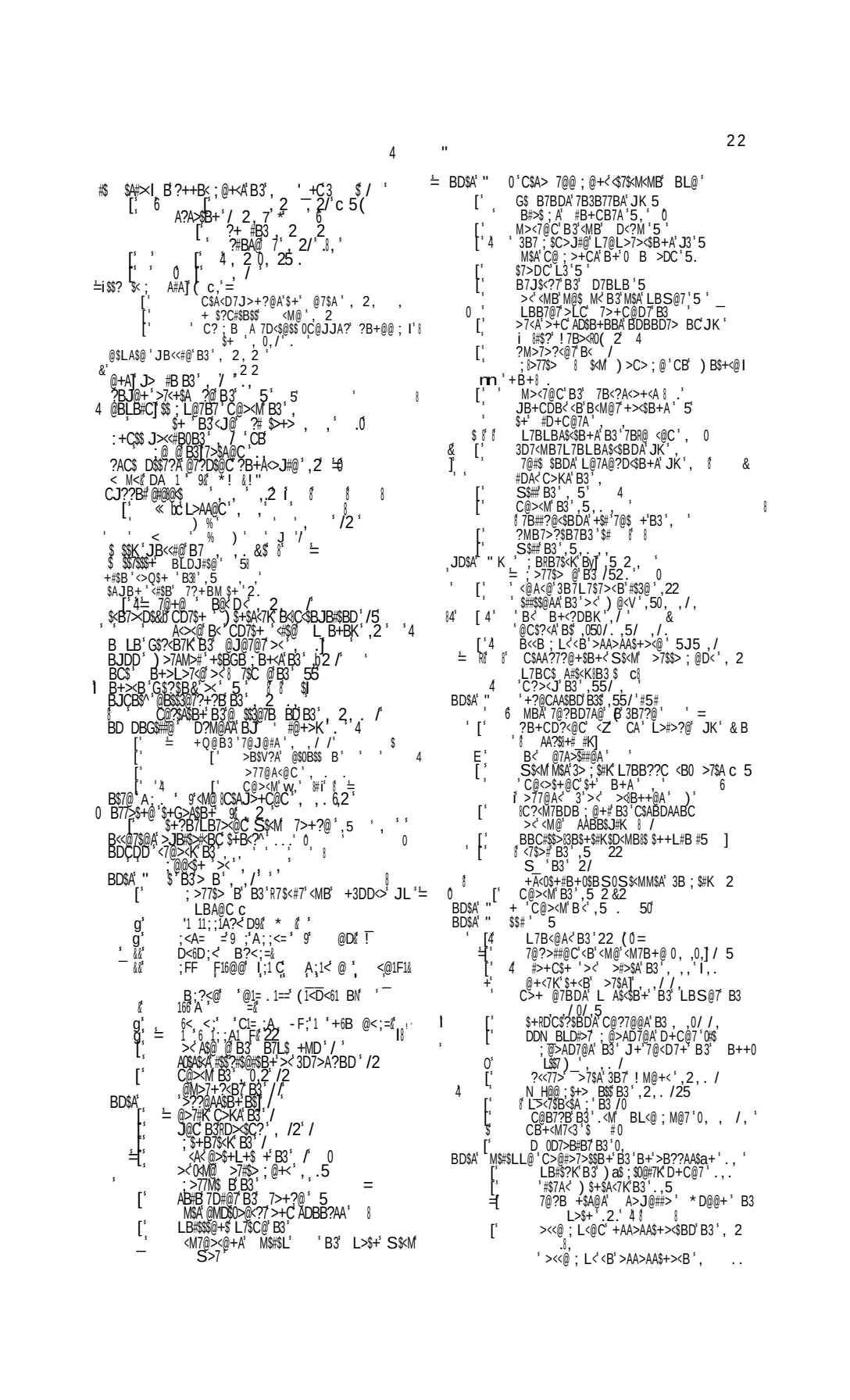
H?7H<>'B3'<M@'?B<$+? 'BL@+#K'AB#&/'
[' B3''B#K' , 2 , '
[' B3''D#K' , 2 '7@GBQ@C' '
@#>D+>K' ! BG@7+B7'C@><M'B3' y&
@+>$+ 'G$?<B7K'><' ,5 , /'
@L>7< ; BB<A' 7>+?@'C'G$C@C'$+<B' '
@LD<$@A' C@?#>7><$B+' B3' BLLBA$<$B+' 'D#K' '
, 2 , 2
@A ; BD#$+A' > ; $##@'><'<M@' >#>$A' ,BK>#' ,'
@AAB @' ! @+@7>#' ' BA<7R B3' , ' ,
@<<$B @B' J><<#@'B3' , 5/2 ,2 ' , ' ,
$C<@ A'L#B<'><' ! 7@+BJ#@' /// '
$7@?<B$K '0@#@?<$B+'B3'<M@' ,5 . 5 '
3$7A<'>?<A'B3'<M@' ' 5 '
' @ ; L#BK' ; $#$<>7K'3B7?@'$+' <><@'LB#$<$?A
5/
' L7$+?$L#@A'B3'<M@'UHc
' L@7$#A'>+C'C$33$?D#<$@A'B3'<M@' '
[' C$AAB#D<$B+'B3'<M@' ,5 2
$7A<@$; ' B+>L>7<@'><'2 2'
$A<7@AA'B3'<M@' BG@7+ ; @+<' ,5 . 5 '
$A<D7J>+?@A'$+'<M@'C@L>7< ; @+<A', /, , 2'
$+'<M@' L7BG$+?@A', 5 ' ,
<' V@7' ; >?7M'B+' , / /
<' B+B$B B'@NL@C$<$B+'<B' ' 2, '
@ ; >+?$L>@C'/ 2'
II BS+'S<M'<M@'J>7 II 7>##K$+ '?7K' '
7@AC@+' B+ 7@AA'B3' , 25 '
[' J><<#@'B3' ,2 2'
%% 7B$<'C@'L>D#@<<@ I'>JB#$<$B+'B3'<M@'C@ ; >+C@C'
, /'
P ' 7B$<'C@'7H >#@ O' 5 '
DJB$A' >7+>#' '
[' C@><M'B3',
D@##$+ LD+$AM@C' 5'
D ; BD7$@V'C@3@?<$B+'B3' ,5 2 /2'
D+@A'J><<#@'B3'<M@' , .
D+Q$7Q'<>Q@+' , / . .
[' A$@ @'B3]'7>$AHC' ,5 2 / '
DL#@N'+' +C$>' , /
C$A 7>?@' >+C'C@><M'B3',' ,'
DaD@A+@'G$?<B'$@A'B3' , 5 '5 '
D<?M'L@>?@'L7BLBA@C'<B'<J@' ' ,
' <M@'C7$G@+' J>?Q' $+' @# $D ; ' JK' 7@+?M'
>7 ; K' 2,
[' <M@' ; >7?M'$+<B' @# $D ; ' , 2,] . '
KQ@A'BL@+@C'$+' B##>+C'5
& ' +C$>' B ; L>+K' 2
>A<@7+'>33>$7A' D7BL@>+'<7@>&'B+' . '
[' C@L>7< ; @+<A' M>7#@A' GA<A'<M@
/ 5
' aD@U<$B+'<M@', 2 I, / ' .5
?Q ; DM#'J><<#@'B3' ' 2 2'
C$?<'B3' >+<@A'?B+3$7 ; @C' ,2
7@GBQ@C' , . .
C$?<'B3'D+$B+' 2
C$?<A'7@ $A<7><$B+'B3'@+3B7?@C' ,5 5 , /'
CD?><$B+'> $<><$B+'7@ >7C$+ ' , /2I, /,$' . .'
[' #>S'7@AL@?<$+ ' 25'
7> '7@<7@><'B+' , &
KL<'@NL@C$<$B+'<B' ,5 /'
' ?> ; L>$ +' $+' ,5 I,5 '2 '
[' ?B+C$<$B+'B3' 7@+?M'>7 ; K'$+' , 2,'
[' @G>?D><$B+'B3'2 ,5
>+C' D7Q@K A<7D #@'J@<S@@+' , 2 I2 .2 '
I 7$A?M'?B+G@+<$B+'B#' , 2,
#J>' ; G@+'<B' B+>L>7<@' , /' / 5'
' B+>L>7<@$A'C@L>7<D7@'3B7' , ,/ / , '
' 7@<D7+'B3' B+>L>7<@'UB ; ' , ,.' / /'
#JWD3' DQ@'B3'@N@?D<@C' '
#@?<$B+A'B3'<M@'K@>7 ' ,5 5 '
[' B3' , ' /
[' J@7>#' , 5 /
@+@7>#' , 2 /
[' >++D##@C' , 2 '.
#@?<B7>#'#>S' , ,5'//5
7@ ; BC@##@C' , 2, '.

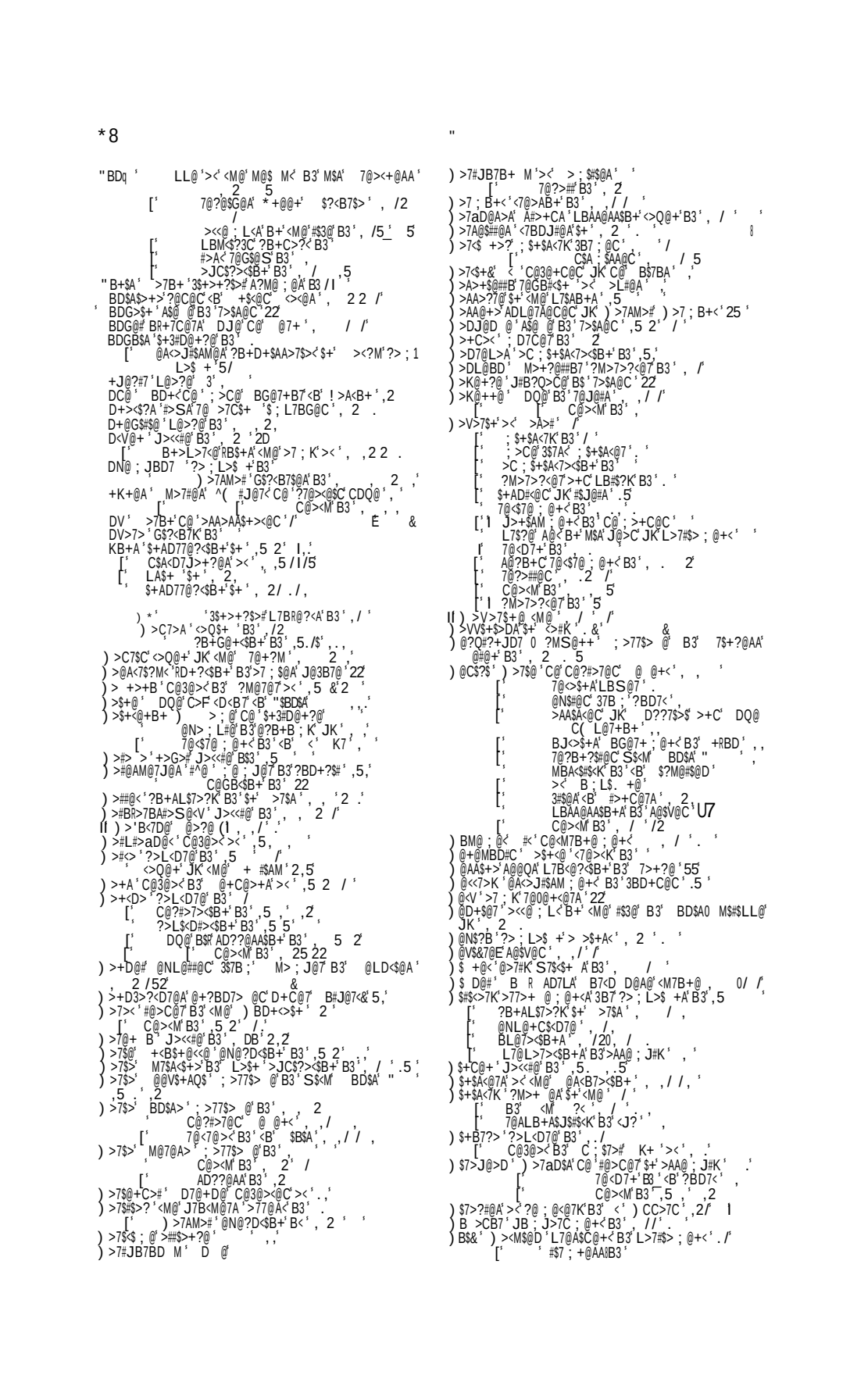
; $ 7><$B+' B3'+BJ#@A' ,5 , 2, , '
[' $+?7@>A@'B3' , '
; $ 7>+<A'#>S'3B7'7@L>7><$B+'<BK'/ , '
; L$7@'@A<>J#$AM ; @+<'B3'<M@' , / 22 '
B?K?#BL>AC$>'<J@', 5 '7
+ M$@+' DQ@'CI'y B+CH^'2
[' >77@A<'>+C'@N@?D<$B+'B3', /
2
+ #>+C'A@?B+C'7@GB#D<$B+'$+', '
<7D?@'S$<M' 2
[' >##$>+?@'S$<M' 5 ,5 ,5
S>7'C@?#>7?>'S$<M','5. , .2
S>7'S$<M' ,55 ', 5.
<7@><K'B3'?B ; ; @7?@'S$<M',
[' $+G>A$B+'B3'L7BR@?<@C /
[' LBS@7'B3'><'A@>'2,
[' C@?#$+@A'L@>?@'2,
[' $+G>A$B+'B3'L7@L>7@C'3B7', , 2, '
[' L@>?@'S$<M' , ' 2,
[' C@?#>7@A'S>7> >$+A<'L>$+'22/
[' L7BLBA@C'$+G>A$B+'B3'22.
+@ B<$><$B+A'#B7'L@>?@'S$<M', 2/2'
[' $+<@73@7@A'<B'L7B<@?<'7B<@A<>+<A', , .'
&
[' > $>+?@'S$<M'A<7@+ <M@+@C', 2 2/'
C$A 7@@ ; @+<'S$<M', / , .
+ #$AM'C$A@ ; J>7Q'$+'$A#@'B3', MH', V5 ,'
+<MDA$>A ; 'B3'<M@'+><$B+'2.'
L@7+B+' DQ@'C'I '>AA$A<A') >7$@'CB'M3@C$?$', ,'
73D7<'?>L$<D#><$B+'B3', 2/.
[' <7@><K'B3', 2
AL>7<@7B' ! @+@7>#' BG@7+ ; @+<'B3' $+' L>$+'
PNF'JHP
AA#$B ' J><<#@'B3', 2 /'
D @+@'>7 ; K'B3'RB$+A' B+>L>7<@'2 .'
D @+@' 7$+?@'$+' <>#K'2
D7BL@'A<>#@'B3'$+', 2. 2,'
' ><'L@>?@'
[' 7$A@A'$+'3>GBD7'B3' B##>+C'5'
[' S>7'> >$+A<', I, 5'
[' $+'7@LBA@' 2'
[' A<><@'B3', 5, , ,
@+@7>#'7A+' B3'> >$+A<' 7>+?@', 5 2'
/
' A@?B+C'?B>#$<$B+'B3 > >$+A<' 7>+?@',5 '
5
[' AD33@7$+ A'B3', , 25 '
#$J@7>#' ; BG@ ; @+<'$+', //I, / . '
D7BL@>+'#@> D@'> >$+A<' BD$A'" '5 '
<'>+ @#$?>#'D+$B+'2 '
N>?<$B+A'B3'+BJ#@A'2'
N$#@A'$+C@ ; +$K'<B' , . /2/'
K#>D'J><<#@'B3', 5 2.

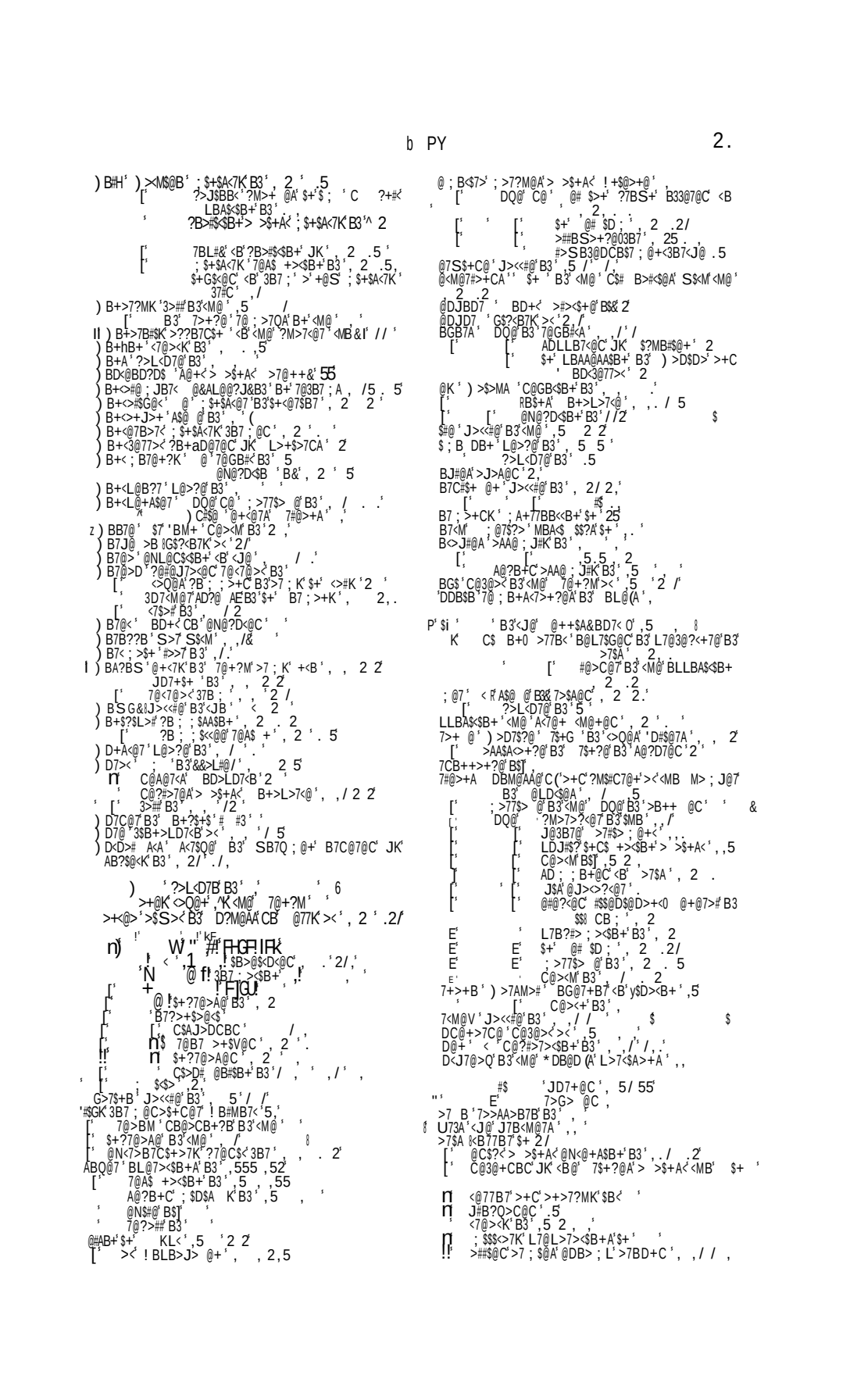
' 'J7>G@7K'B3'><' 77>A'2'
>?<B$K'#>S' , / .5 '
P' > ; $#K' 7@><KO'A$ +@C',5 , , '
> ; $+@'$+' >7$A' ' '
>7 ; @7 I @+@7>#'L7BA@?D<$B+A'> >$+A<',5, , ,
%% @D$#$>+<O') $+$A<7K',5 ' ,
>K@<<@' @'#>') C$#@'
>K@<<@' >'7@>LL@>7>+?@'B3', , .'/2
@C@7><$B+' $@'B$<M@' ,
HCH7HA') >7A@3ASA'$+' >7$A'
H+H#B+'
@7C$+>+C' $+ 'B3' BM@ ; $>' ' 0
@7C$+>+C' , ,& C@><M'B3' 25'2.'
@7C$+>+C' 'L7B?#>$; @C' ; L@7B7' , ' '
@7C$+>+C' ## 'L7B?#>$; @C' $+ 'B3' L>$+ ', '
2 5
[' #$J@7><@C' , ,'/'2 /
}7@' M> ; L@+B$A@' J><#@'B3',' ,7'/ ,'
@77>7>'B??DL$@C'JK'<J@' DA<7$>+A' ,/5' 2'
$@ABJ$'><@ ; L'<B3'<B'>AA>AA$+><@' BD$A' M$#$LL@'
, 2. ' /
$3<M'?B>#$<$B+'> >$+A<' 7>+?@', 2 ,
$+>+?@A'C$AB7C@7'B3', 5, , ,
$7@' 7$ >C@'@A<>J#$AM@C'$+' >7$A', 5 ,

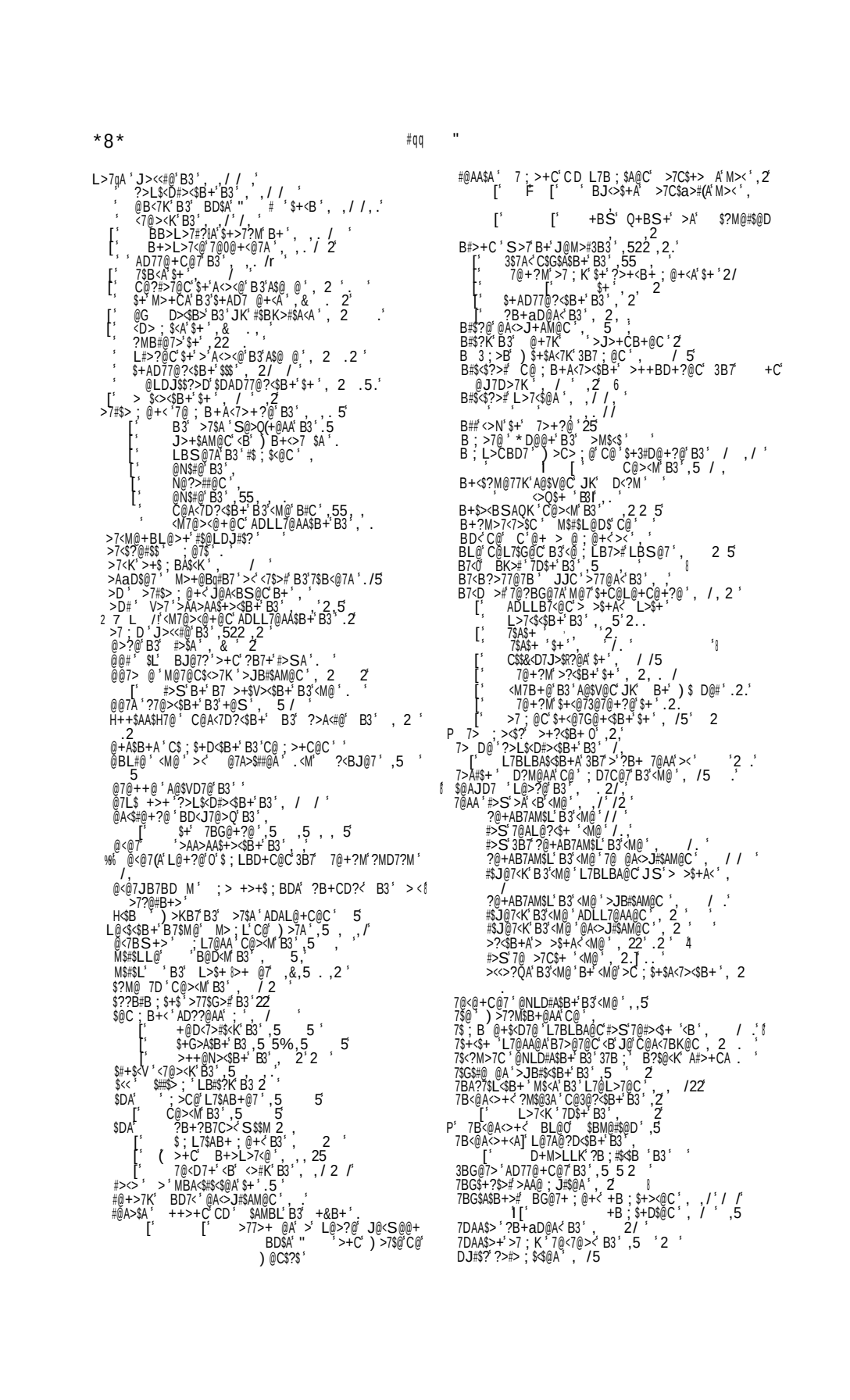


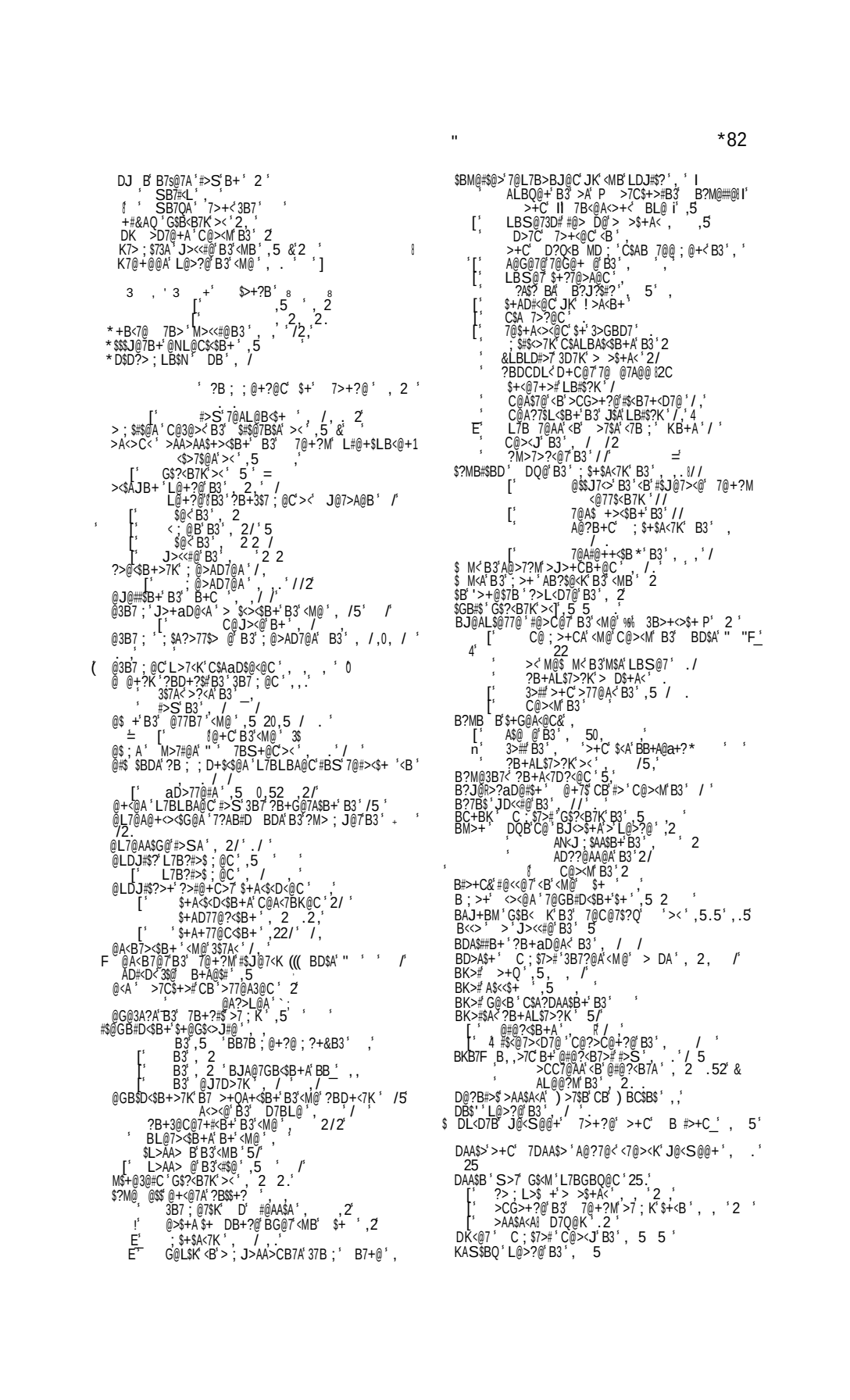


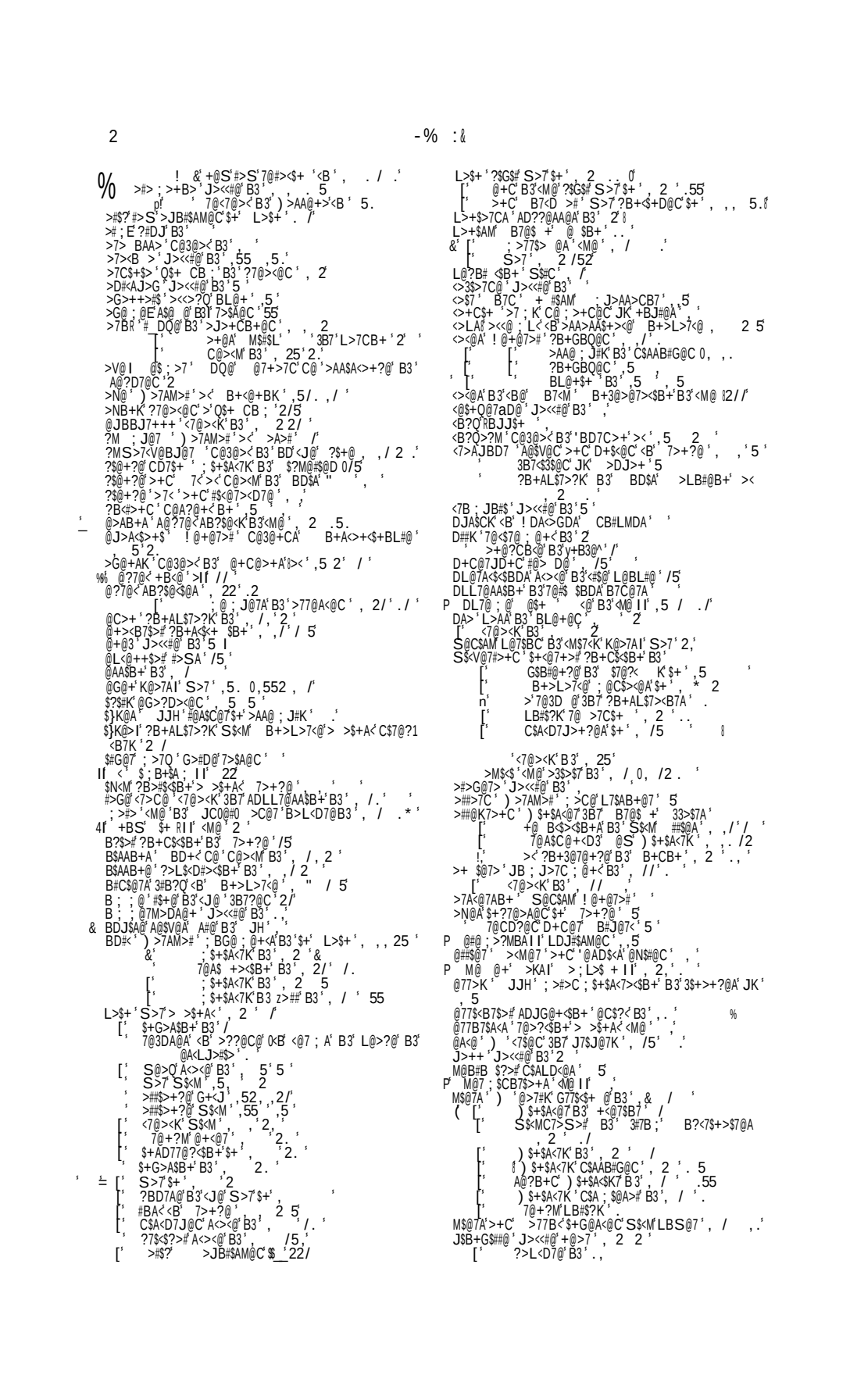












M$7C' ?B>#$<$B+' B3' +7BL@>+' LBSB7>?' H'
4 [' E' / 22/
I I MB' M$7C' A<!=<F !I' ;'
[' [' <7@>;@C' S$<M'$+C$ +$<K'
M$7C' L>7<K ' <M@ ' , 2/ .$<\'
M$7<K' K@>7A(S>7 ' B7$ $+' B3 ' , ,
[' [' @+C@C' $+' ! @7 ; >+K ' ' 4
MB+' >F @N@?D<@C ' , / ' /2
M7@@' C>KA' B3 ' D#K ' <MB ' , 2 2'
$##K ' C@><#$' B3 ' 2
$#A$<' #@N>+C@7 ' >+C' B+>L>7<@' >< ' , 5'2.2'
[' L@>?@' B3 ' , 5'2 /'
$LLBB' >M$J ' , ,
$7#@ ; B+< ' A>?Q' B3 ' 22'
B?aD@G$##@ ') ' C@ ' AL@@?M' B3 ' ' , ,'
B$7>A ' @ ' C@3@+CA' <') >7<$+ ' ,'
B#@+<$D@ ' J><#@' B3 ' , . /2 '
[' <7@><K' B3 ' ,5 5'
B77@A' @C7>A ' #$+@A' B3 ' , , 2 '
BD#B+'$; L7BG@C ' 5,
[' A$@ @' B3 ' 7>$A@C ' , '
J><<#@' B3 ' , I5/ , ,/ '
[' J#B?Q>C@' B3 ' JK' @#AB+ ' 22.'
[' @A?>L@' B3' 7@DBJ' 3#@<' 37B ; ' 22 '
BD$BCA@ ' J><#@' B3 ' / /
[') >+C><@' B3' 7?MJ$AMBL' B3 ' /5 '
BD7G$##@ ' C ; $7>#' AD?B<@AA' B3 ' '
7>3>#' >7 ' J><#@' B$J ' , 2' 2 ,
7>+A+B+>$D ' D@ ' ; >AA>?7@' $+ ' . &
' 7>+AL>C>D@' BLDJ#$?' ' '
7@><K' B3 ' , ,<M' L7$#' , , /' / 5
[' <J' BG@ ; J@7 ' , ' / / ,
[' <M' ' D#K ' , 5 / /'
$ ' ' , / ' B+' >A<@7+' * D@A<$B+' .5 '
7@J$>' C@3@><' <M@ ' ,5 ' 2 ,
7BG@A ' 7@G@7A@A' +@>7 ' 55
7@G$AB ' DQ@' CB ' ; $+$A<7K' B3 ' /5'
II 7$JD+@ ' M@ !I ' <7$>#' B3' BBBCDB<B7' B3 ' , 22 2 '
[' L7@AA@A' B3 ' A@>#@C ' /
7$?B#BD7@C' ?B?Q>C@' >CBL<@C ' ' '
7$L#@' >##$>+?@' > >$+A<' BD$A ' 5 '
& 7B?>C@7B ' ?>L<D7@' B3 ' , 2' /5/'
7 +?M@<' ?BD+A@#' 3B7' BD$A' " ' 22'
7BLL>D ' B+ 7@AA' B3 ' , ' / . '
7BK@A ' 7@<7@><' DLB+ ' , ' 2 2'
D$#@7$@A ' ><>?Q' B+' <M@ ' ,5 ' 2
[' <MB' ; BJ' > <' <MB ' , / ' ! ;5' &
[' <M@' L@BL#@' ><' <M@ ' ,5 ,
D ; D#<' LBLD#>7 ' , / ' ..'
D7?>$D ' G$?<B7K' ><' .
D7@++@') >7AM>#' ' ,
[' C@?#>7@A' M$; A@#3'3B7' 7B+C@D7A '
E' C@3@><@C' ><' @<MC ' .
E' $+' ?B ; ' >+C' B3>7 ; K '5/'
E' ' G$?<B7$@A' B3 ' 5 '
[' $+' #A>?@' ' '
[' ' C@><M' B3 ' . 55
D7 B<' BL@7><$B+A' B3 ' ,55/%,55 ,5 '!
[' C$A ; $AA>#' B3 ' ,52
D7$+ '?>L$<D#>$B+' B3 ' , / 2 ' I
' A$@ @' B3 ' ,
[' 7BD<' B3'<M@' 7@+?M' J@3B7@' ,5 , '
[' >7 ; $A<$?@' B3 ' ,5 ' 5
& D7Q@K' $+G>C@C' JK' ##D>A$>' ' 5'2 '
D7Q@K' >+C' KL<' A<7D #@' J@<S@@+' , 2 & '.2.'
D7QA' ><>?Q' DA<7$>'5
P S@+<K03BD7' 7<$?#@A i' <7@><K' B3' <M@' , 2 '
SB' MD+C7@C' >+C' <S@+<K0B+@' >CC7@AA' B3' <M@E'
, 2 /

?>L$<D#>$B+' B3 ' 22
!$ ' +Q$@<! Q@#@AA$ ' <7@><K' B3 ' , 22 .2 '
LL@7' BK>#' BD+?$# +B ; $+><@C' / ,/'
#7@BM<' L@>?@' B3 ' ,5 ,2 , .

E * - F @E9 ' ' ' + 4 4+8'
= ^ ' ! ' ' 7'4

>#' C@' 7@A$@ !J><<#@' B3 ' /'
A#@+B$@++@A' ? > <> 7@' B3 ' 5
[' A$@ @' B3 ' 7>$A@C ' ,'
>#@<<@' >7 ; K'D+C@7' >7C$+>#' #>' ' 2'
># ; K ' J><<#@' B3 ' ,5 5'
>#<@#$+@ ' M@ ' LBAA@AA$B+' <>Q@+' B3 ' , '
[' 7@A<B7@C' <B' <M@' ! 7$AB+A ' ,5
' BL@7><$B+A'$+' <M@ ' 2/' ! $I
@G>?D><$B+' B3'<M@ ' 2.
>+' 7B ; L' >?<$+ ' S$<M' B+C} ; '
>7@++@A ' >77@A<' B3' BD$A' " ' >< ' /'
>DJ>+' ><<>?M@C' <B' >7 ; K' $+' B##>+C' 5/'
@+C3 @' >' S>7$+ ' ,5 ,5 / ' /'
[' L7B 7@AA' B3'7@GB#<' $+ ' /
A@?B+C' S>7' $+ ' ,5 . ,5 52
[' <7BDJ#@A' $+ ' , 2
@+C\ ; @&' <M@' J7B<M@7A ' >77@A<@C ' , '
[' $+' ?B ; ' ; >+C' B3'>7$; K'
[' C@><M' B3 ' , /
@+@<$&' ><<>?Q' DLB+ ' 5'
@+$?@' ?@C@C' <B' DA<7$>' ,5 5' '
@7CDB ' ?>L<D7@' B3 '
@7B+> (A#>D M<@' B3' >77$AB+' ><' &
[' B+ 7@AA' B3 ' , /5 '
@7A>$##@A' D<?M' ?B7LA' >< ' , ,'
[' L@>?@' B3 ' ,5 2 ,
[=' BL@+$D B3M$A<B7$?># >##@7$@ >< , 2 '
5
$?<B7' ; ; >+D@#' >JC$?><$B+' B3 ' , , / '
$?<B7$>' ' * D@@+' ' + #>BC ' 5
[' GA<A' 7>+?@' /2 /
$@D+> ! 7@+?M' >7 ; K' @+<@7A ' 22 '
[' [' ; >?7M' B+ ' , 2!2
[' L@>?@' B3 ' , B 2 5
[' ?B+ 7@AA' B3 ' / 2
$@DG$##@ ') >7aD$A' C@' #>' $M' 3>GBD7 ' ,2'
[' C$A 7>?@C ' ,2
[' @N@?D<@C '
$ B' C@3@><' >< ' '
$##>7A ' ! B+@7<D ' G$?<B7$@A' B3 '
[' C@3@><@C' >< ') >#L#>aD@<' ,5,
"
E' [' G$?<B7K' ><' @+>$B ' ,5, , /
B' [' C@><M' B3 ' #2.
$#$>G$?$BA>' G$?<B7K' B3' @+C\ ; @' >< ' ,5, , , 2'
$##}#@') , ' C@') $+$A<7K' B3 ' /
[' C$AAB#G@C' , 5 / 2
$##@ ; >$+' ,) ' @CD'?><$B+>#' L7BR@?<' JK' , / , ,
$##@+@DG@ ' C ; $7>#' $+' ?B ; ' ; >+C' B3 7@+?M' 3#@@<'
2
$##@7B#' 7@<>$+@C' $+' B# B@' , , ' '
C@3@><@C' >< >$+$$$@A& ,5 ' '
$; $@7> ' J><<#@' B3 ' , ' 2.
$+?@+<' J><<#@' B$$I' >L@' 2< ' , . '
P' $A>I I' $+' ,5 , 5'
$<<B7$> ' J><<#@' B3 ' , ,2' 2 5

i & ! $) ' J><<#@' B3 ' , '
' ' >#?M@7@>' @NL@C$<$B+' , 2 5'
>#C@?Q' 7$B?@' B3 ' B+' <+@' >' 7@' ,
>##@+A<@$+' ! @+@7>#' C$A ; $AA>#' B3 ' C@ ; >+C@C '2 '
[' 7@?>##@C' 2
>7' B3'<M@' 7B+C@' 5
[' @+C' B3'<M@' , 2 /'
>7' B3'$+C@L@+C@+?B' ,55 %,5 2' ,5 '
>7' B3'AD??@AA$B+' ,5 ,%,5 ,2 /'
>7A>$ ' 3>#' B3 ' , 2 ' ,
>AM$+ <B+' ! @B7' @' ,5 ,2'
[' B ; ' >+C@7@$>0' M$@3' B3' ; @7$?>+'
3B7?@A' ,5
><@7#BB' J><<#@' B3 ' , ' /22'
><$$ +$@A' G$?<B7K' ><' / '
@$; >7' DQ@' C@><M' B3 ' , 2 2 '
@##@A#@K' $7' 7<MD7 ' $+' B7<D >#' ' '
@##$+ <B+' ?7BAA@A' <M@' K7@+@@A ' , ,/ ' / '
@A<LM>#$>' L@> @' B3 ' , / '
!@A<' +C$>+' B ; L>+K' @A<>J#$AM@C ' , /' '
M$ A' >+C' B7$@A ' , 2

/ !

($ $;'< 'B3' +A#>BC'$+' #++CB7A ,'=
4 0E' ' = 'I' CB$$B3 ' y
= 3#$+,'$3' 7>+ @'?#C?#@C >L<>$+0'!'?+@7$$#'5,]
' 3#+>'M>#<'B3' 7@+?M'>7;K'><',, 2,' q
i $<>' @J' ;>A3>?7H'B3'<M@'5.' 4 7' =
P B7;A'<7@><K'B3]' '
B7AM$^$B7 @> . ' ' ' = = 4
BD+C?C'<B'J@'C@+BM+?@CMK'AD7 @B+A',2 .2 0'
0 B7;A@7$+)B$&<$$>'

$ _!' %,7' 'I !7 ';>? '
$) ^) !'R
'A$@ @'B3' r!',5 (

2 - F9E :0 4 3
a 7 ' ' 8 'sk '
-B7$BJ0&' $B<B$&'><&'2 ,'

" " " ! !

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